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ORIGINAL ARTICLES

TREATMENT OF ASTHMA IN PULMONARY TUBERCULOSIS.*

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During the past three years I have examined and studied nearly three hundred cases of tuberculosis. From among this number I have selected twelve cases suffering from asthma. Of these cases seven presented B. tuberculosis in their sputum. One an advanced case with marked cavitation in both lungs and extensive peri-bronchial infiltration. In five the diagnosis was made upon the clinical picture, careful fluroscopic and X-ray plate examination, and vaccine test. The sputum was negative. Three were between the ages of fifteen and twenty-one years, three were between twenty-eight and thirty-five, five between thirty-five and forty-seven and one fifty-seven.

I do not wish to enter into a long discussion of the subject of asthma, but must mention some of the work that has been done in the treatment of true bronchial asthma and atypical asthmatic bronchitis. The type I have found in my tuberculosis patients has simulated the atypical type. This is to be expected when we consider that no lung findings are found in cases of the true bronchial asthma after death; but in the atypical cases we find the pathological changes due to the bronchitis. At this point a long consideration of sensitization for the various vegetable and animal proteins and lipoids could be commenced, but it is not within the scope of this paper. I wish only to show that the theory of my treatment of asthma in pulmonary tuberculosis is based upon the investigations made in regard to sensitization and desensitization in true bronchial asthma and hay fever.

In the asthma due to infections we are dealing with the bacterial toxin and in the tubercular infections probably a lipoid substance that will give symptoms of anaphalaxis. The nature of this toxin is a protein and lipoid that is a constituent of the bacteria. They only enter the blood stream after the death of the bacterium. Pfeiffer called these substances endotoxins to distinguish them from those produced by the living bacteria in their living state, or exotoxins or true bacterial toxins. This latter group is represented by those of diphtheria and tetanus. They are used for immunizing horses for antitoxic serum. Dr. Karl von Ruck comments upon the acute nature of these diseases and that their treatment does not extend over a prolonged period of time. The bacillus of tuberculosis causes marked destructive changes in the tissues but produces no true toxin as above. The damage is due to the endotoxins in the nature of proteins and lipoids. The substances are constant for each class of infections.

In asthma we have an anaphylaxis. Protein substances inhaled, ingested, or thrown into the blood stream cause this phenomenon. Anaphylaxis consists simply in the cellular reaction due to the fixation of antigen by cellular antibody. Anaphylactic shock is therefore due to a specific antigen or protein meeting with its antibody and the resulting reaction gives rise to a split-toxic-product. The antibody must be formed by a previous entrance of the same identical protein. After the formation of the antibodies the amount of toxin entering the blood stream if excessive is not completely reduced, but the cleavage in the blood and tissues results in intermediate split-toxic-products which are irritant and give local, focal and general reactions. This reaction is specific and it is necessary that the antigen be identical in its molecular and atomic constitution with that responsible for the anaphylaxis. This ex-

*Read before the Florida Midland Medical Society, at Orlando, October, 1920.

plains the tuberculin reaction and also the reaction due to vaccines.

The whole theory in regard to asthma is based upon anaphylaxis. We do not know how the patient may be sensitized, whether by the whole protein or the split-toxic-products, when it meets its antibody. We do not know whether the whole protein or the split product irritates the nerves of the bronchi.

I am attempting in this discussion to show that a person with pulmonary tuberculosis may be sensitized by proteins and lipoids resulting from the disintegration of the dead bacilli. Antibodies are formed in the organism. When a tubercle or larger area breaks down the toxin or antigen from the bacilli is liberated. The antibodies are not sufficient to neutralize the split-toxic-products and irritation of the bronchial nerves causes the attack of asthma, but as in asthma from other causes only those who have been sensitized will suffer an attack. I have no theory to explain why one patient should be sensitive while another is not.

Dr. Karl von Ruck and many others have made an extensive study of the chemistry of the tubercle bacillus. His biological chemical experimental findings have shown that spontaneous bacteriolytic immunity against the tubercle bacillus and its constituents is accomplished slowly. In order to produce resistance to infection bacteriolytic amboceptors must be formed for all body constituents of the bacillus.

In treating this series of cases I have used a vaccine against tuberculosis manufactured by Dr. Karl von Ruck in his laboratory at Asheville, N. C.

This vaccine, in brief, is made from the tubercle bacillus itself. It consists of the endotoxins of the bacteria and has as its constituents several complex proteins, lipoid substances and extract of the waxy capsule.

In administering this vaccine for desensitization I have made the dose small enough to avoid severe reactions. In many cases my initial dose has been 0.03 c.c. to 0.05 c.c. This dose is gradually increased at seven-day intervals until the patient is able to receive 1.00 c.c. to 1.50 c.c. without reaction. In this series of cases eleven have had no asthma since the dosage reached 0.50 c.c. of the vaccine. In one case, the patient, fifty-seven years of age, after receiving a dose of 0.20 c.c. with only a local reaction, did not return for further treatment. One case of advanced tuberculosis under treatment in the Red Cross Tuberculosis Clinic, whose asthma seemed to be continuous, has been relieved of the attacks since his dosage reached 0.50 c.c. of the vaccine. One case, an Italian, was sensitive for horse dander, but I found that his asthma continued after the removal of the cause. I then made a careful clinical, X-ray and vaccine test and a diagnosis of tuberculosis. With desensitization, he is now free from asthma.

In conclusion I wish to urge a more careful examination of all asthmatica, for in many cases a tubercular condition may be the cause, and failure of the other treatment may be due to that condition. Many require several days of careful examination with temperature charts, vaccine tests, the use of the X-ray, and careful sputum examination.

Then bear in mind that when a case has a positive sputum it is an open case and a menace to all. Make the diagnosis early before the tubercle bacillus makes its appearance in the sputum and your case will recover more quickly under proper treatment.

DIAGNOSIS AND TREATMENT OF PULMONARY TUBERCULOSIS.*

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Sanford, Florida.

In the diagnosis of pulmonary tuberculosis nothing is more important than a history properly taken; this, with physical, clinical, laboratory and X-ray findings, will complete a diagnosis.

The family history is only good as to environment, that is whether six or only three children slept in one bed.

The past history, as to occupation, whether

*Read before the Florida Midland Medical Society, at Orlando, October, 1920.

the patient has been confined, or suffered from gastrointestinal disturbances over a period of time. It is a queer fact that many patients with tuberculosis complain only of gastric disturbances. Many give a history of exposure, or a prolonged sickness; of course tuberculosis may follow any infectious disease, in the majority of cases it follows some stress upon the system. The height and weight are important, especially as to loss of weight. Other complaints associated with this disease are mental, nervous, circulatory, dyspnœa and pleurisy. Respiratory symptoms; cough, persistent for a period of time, say six weeks with no known cause, or hoarseness morning and evening.

Lawrason Brown, of Saranac Lake, says 90 per cent in adult life have had a dose of the bug; we have overcome it, that's all. This happens between the ages of five and fifteen years and during this time we develop an immunity. Races that are not free from tuberculosis show more immunity than those where tuberculosis is not prevalent. The history of tuberculosis among the British Colonial troops during the past war bears out this statement.

On inspection the patient must assume an erect posture; it is best to have him sit on a high stool. Muscular relaxation is essential; the patient should be facing a good light and not too near the wall. We observe the general appearance:

Build—robust, medium, or delicate.

Nourishment—good, fair, poor, or emaciated.

Type and shape of chest—this is very important, they are classified as broad, flat, long and narrow, funnel, chicken and barrel shaped, notice for a change in contour of line from base of neck to shoulder, the shoulder is usually dropped on the affected side; other conditions noticed on affected side are dilatation of pupil, flushing of cheek and wasting of muscles under or below clavicle.

Movement of chest — a lagging will be noticed on the affected side; this is best detected by standing behind the subject and placing an ink spot below each clavicle and noticing which comes into view first on deep inspiration. If retraction of chest is present it is indicative of fibrosis, restricted expansion suggests either an old lesion caused by diminished expansibility of lung tissue (fibrosis), pleurisy with adhesion, or a more recent lesion with fibrosis, this last being largely reflex.

In palpation we now confirm the movements seen during respiration. Tactile fremitus is the perception of pulmonary vibrations imparted to the chest wall (likened to the purring of a cat, but much finer); it is best illicited when the subject repeats monotones and the ulnar surfaces of examiner's hands are applied lightly to the intercostal spaces; in doing this the examiner should stand at subject's side. This fremitus is normally increased on the right side to the second rib in front, due to the position of blood vessels and bronchus, and also between the scapulæ.

Percussion: I will pass over this quickly. a quiet room is absolutely essential; to get the best results always use firm pressure of the finger in intercostal spaces, using enough pressure so as to leave imprint of finger. Deliver light blows and from the wrist; a common error is too heavy a blow and not getting the plexor finger away quickly. Another important point is not to percuss one side during inspiration and the other during expiration, especially if comparing sides. In percussing a chest always begin at the base of the lung, working up and comparing both sides.

Auscultation: Here also a quiet room is necessary; auscultation is the most important method in physical diagnosis. It is well to spend one-half of your time on it. A Bell stethoscope is considered by most authorities to be best adapted to chest work. Certain adventitious sounds are sometimes heard which must be detected and ruled out.

1. Muscle sounds — adjust position of patient to relax muscles of shoulder and neck.

2. Sternal and costal—sternal sounds, to eliminate these have patient hold breath and work shoulders forward and backward.

3. Skin and hair sounds—eliminate these by moistening chest with water or oil, or shave chest.

4. Another sound sometimes heard at base of lung is called the marginal sound. It is due to separation of pleural surfaces where the lung margin penetrates the complemental sac and is best heard on first inspiration after quiescent breathing.

The detection and classification of rales in the chest is the most essential element in auscultation. Rales are—

(1) Fine.

(2) Medium.

(3) Coarse.

1. *Fine rales* are heard only during inspiration (they mean acute inflammation); they probably originate in the alveoli of the lung, are heard late in inspiration and are produced by the separation of agglutinated surfaces; they are best heard after a light cough at the end of expiration; this gets rid of the residual air and causes the alveoli to collapse. Another point, they always come in showers, are of the same size and suggest that their origin is close to the ear. They are of a high pitch, simulating hair rubbed together between finger and thumb close to the ear. All rales are caused by moisture. A dry rale is a misnomer. Fine rales are absolutely the first sign of incipient tuberculosis, and must persist after a cough.

2. *Medium rales* occur any time during inspiration, usually a short time after beginning; they are coarser, lower pitched, all of the same size, occur in showers and heard only during inspiration. They persist and are only heard after a slight cough. These rales are heard in moderately advanced tuberculosis.

3. *Coarse rales.* These are also caused by air passing through moisture, usually in a bronchus; they vary in size, occupy no fixed time during respiratory cycles, may occur during both expiration and inspiration and may be altered or disappear after a cough.

Early signs of tuberculosis are not seen in the apex of the lung. Anatomically speaking, the apex is the part of the lung above the clavicle and the third vertebral spine. Early signs are first seen about one-half way down in the upper lobe; the greatest destruction of lung tissue is seen here. The structure of the lung is the cause of this. X-ray findings will bear this out.

Clinical symptoms differ with each stage of the disease.

1. *Incipient tuberculosis.* Here we get slight constitutional symptoms or disturbances, slight loss of appetite, slight or no loss of weight, lassitude, slight acceleration of pulse with hypotension, slight or no rise in temperature and absence of tubercle bacilli in the sputum. The alarm zone is the supraspinous fossæ and corresponds to a point below the mid-clavicular line anteriorly, that is the upper three interspaces. The disease most always extends downwards and outwards; when we have a physical sign in the apex we always have involvement of the lower lobe. This also usually occurs before an affection of the opposite chest. Another point of importance is that right-sided trouble is most common two to one, this due to the structure of the lung. It is imperative for a man's life that we all diagnose pulmonary tuberculosis in its incipiency, as one out of every ten people have tuberculosis. It is a known fact that a man with pulmonary tuberculosis may die before the germ is found in his sputum.

Any case of pulmonary tuberculosis with early gastro-intestinal symptoms is considered a grave case.

The X-ray in incipient cases will show enlargement of the peribronchial nodes on affected side and soft mottling of the first zone of the lung.

2. *Moderately advanced tuberculosis.* Here we get no marked impairment of function either local or constitutional. Localized consolidation moderate in extent, dyspnœa on exertion limiting activity, rise of temperature, marked weakness, loss of weight, loss of appetite, fast heart, cough, moderate extent of localized consolidation an area of one-half lobe or less, may involve apex, presence of bacilli in sputum, disseminated fibroid deposits and medium rales. Complications seen

are nephritis, orchitis, adentitis, laryngitis, and meningitis. The X-ray in this stage will show involvement of first and second zones of lung and soft mottling into lower lobe and probably extension into lung of opposite side.

3. *Far advanced tuberculosis.* Here we get a marked impairment of function both local and constitutional, cavity formations, tubercle bacilli in sputum, high temperature, persistent cough, and hemorrhages. Of complications laryngitis is the most common, it is seen in 90 per cent of these cases. It is a deplorable situation to have the patient die of starvation in the midst of plenty. Any complication may occur. Gastrointestinal symptoms always come sooner or later in the far advanced case. Diarrhœa, if it occurs, is usually a terminal symptom. Other complications are neuritis of the extremities, pleuritic pains in elbows and fingers, swelling of feet, pneumothorax may occur and is diagnosed by a sudden pain on either side followed by cyanosis, dyspnœa and absence of expansion on the affected side. Atropine is given for the shock and as a rule if the patient lives three days he will be better than before the attack. A peculiar occurrence is that a great number of male patients develop meningeal symptoms after tuberculosis of the testicle. Pneumonia is generally a terminal symptom in the far advanced case and follows many cases of hemorrhage and is probably caused by inspiration.

Treatment. There is no set rule to follow and what is given here has been proved to be the best by many authorities. Rest in bed, plenty of fresh air and sunshine and a balanced diet. We all know there is no cure; we can help bank the fire, and if the patient lives the right life he may live beyond his time. To get a cure it takes an ironclad rule of conduct. Feed as little as you can and still give enough nourishment. If the patient begins to lose weight change his diet.

An active case is one with constitutional symptoms and running a temperature. These cases should be kept in bed and absolutely quiet. After the temperature goes down and patient gains weight and stays so for three months, the case is quiescent. He may now be allowed to get out of bed. His activity should be very limited and he should be required to go to bed one hour each morning and two hours during the afternoon. To remain quiescent he must show ten consecutive negative sputums, and a normal temperature. By remaining quiescent for three months, his case is considered apparently arrested and remaining so for six months arrested and arrested one year the case is called cured.

There is no medicinal routine, symptoms only are treated. Tuberculin is to be condemned in pulmonary tuberculosis. It has a value in joint, bone, and cases with adenitis. Codeine and heroin are the best drugs to give for excessive cough. For hemorrhages the presence and confidence of the doctor gives the most relief, cracked ice by mouth and ice bags to the chest are of great service. In those cases which hemorrhage slightly calcium lactate is of service, five grains every four hours. Artificial pneumothorax is indicated in those cases which hemorrhage often, and have compensatory power in the other lung. For diarrhœa paragoric and bismuth in cherry laurel water is of great service. Creosote should not be used, it has been proved that it causes hemorrhage. The nearest routine medical treatment is lime water one ounce and a half each night and iodine five drops in milk three times daily. A few words might be said as to climate; the majority of cases do better in a section where there is a minimum of rainfall, asthmatics do better in a low altitude. If you are sending any patients away for hospitalization, they should be considered from a psychic standpoint. If they are too near home they get too much company and want to go home too often, and if they are too far away from home they will become lonesome.

In ending this paper, if the writer has impressed upon you the necessity of diagnosing tuberculosis in its incipiency, which we must all do to be of any service and really save our patient before it is too late, it has served its purpose.

VITAL STATISTICS.

The State Board of Health furnishes the following data relative to the principal causes of deaths, comparing the rates in Florida with those of the Registration Area, for the years 1919 and 1920:

NUMBER OF DEATHS AND DEATH RATES IN THE STATE OF FLORIDA FOR THE YEARS 1919 AND 1920 COMPARED WITH DEATH RATES FOR U. S. REGISTRATION AREA 1919.

CAUSE OF DEATH	Number of deaths		U. S. Reg. Area	Death Rate Per 100,000 Population	
	1919	1920	1919	*1919	1920
Typhoid Fever	176	140	9.2	18.4	14.3
Malaria	440	352	3.8	45.9	36.0
Measles	43	12	3.9	4.5	1.2
Whooping Cough	51	64	5.5	5.3	6.5
Diphtheria	57	78	14.7	6.0	8.0
Influenza	920	868	98.8	96.1	88.7
Dysentery	155	118	4.4	15.9	12.1
Tetanus	36	58	1.6	3.8	5.9
Pellagra	113	111	3.3	11.8	11.3
Tuberculosis (all forms)	993	1,016	125.6	103.6	103.7
Cancer (all forms)	455	497	80.5	47.6	50.7
Diabetes	69	81	14.9	7.2	8.3
Cer. Apoplexy and Paralysis	785	911	84.7	82.1	93.1
Organic Heart Disease	807	1,052	131.0	84.4	107.4
Pneumonia (all forms)	718	839	123.6	75.0	85.8
Diarrhea and Ent. (under 2 yrs.)	369	385	44.2	38.6	39.3
Diarrhea and Ent. (over 2 yrs.)	209	219	11.1	21.9	22.3
Cirrhosis of Liver	62	63	7.9	6.5	6.4
Bright's Disease	625	775	81.6	65.3	79.1
Early Infancy	742	685	65.6	77.5	70.0
Suicides	65	48	11.4	6.8	4.8
Homicides	162	282	7.5	16.9	28.8
Accidents	659	755	72.0	68.8	77.1

*Rates corrected—new population.

Our typhoid rate, while showing a decided decrease in 1920 over 1919, is still too high. Vaccine prophylaxis is evidently not practiced in the state to the extent that it should be. We urge our readers to impress their clientele with the value of this prophylactic measure. It is especially important at this time of the year when numbers of our people are leaving home to spend vacations in resorts often containing foci of typhoid infection.

A comparison of mortality rates in Florida and the Registration Area almost invariably reflects to the credit of our state.

REVIEWS FROM CURRENT LITERATURE

DIPHTHERIA.

Special Symposium—Modern Methods for Prevention of Diphtheria—Park, Zingher, Byard, Banzhaf, Greenwald and Schroeder. Archives of Pediatrics, Vol. XXXVIII, June, 1921.

Park writes that a negative Schick test gives almost as much assurance against diphtheria for future years as for the present. But the greatest care must be observed in having the toxic strength of the injection correct and in giving it strictly intracutaneously. The tendency to continue to produce antitoxin in any case is extremely persistent. He compares the Schick test to vaccination in that a positive Schick reaction or a successful vaccination is a definite sign of a lack of immunity.

Park and Zingher consider the Schick test valuable in determining whether or not a susceptible person still retains the immunity at one time conferred by injections of toxin-antitoxin.

For such purpose they should be tested four times within the year. The Schick test is valuable to clear up the diagnosis of clinically doubtful cases of diphtheria. It furnishes proof of the efficiency of intravenous injections of antitoxin in toxic cases of diphtheria. It shows that an intravenous injection of antitoxin is able to partly neutralize toxin six hours after its administration.

According to Zingher the local and constitutional reactions following toxin-antitoxin injections varied considerably in different children.

Many show no constitutional and but little local disturbance while a few suffer considerable pain, show redness and tenderness at site of injection and experience elevation of temperature varying from 100° to 103.5°.

Following a positive Schick the T. A. T. injections are given at intervals of one week.

Zingher's observations show that children from the homes of the more well-to-do show a higher percentage of positive Schick reactions than those from the homes of the poorer classes who live in crowded homes. This is explained through what he calls "contact immunity." Repeated exposures to diphtheria in congested districts may bring about mild infections which are not recognized as diphtheria, yet lead to a gradual antitoxic immunity. Colored children even when living in congested districts showed a high percentage of positive Schick reactions. Colored children also showed a relatively low percentage of pseudo-reactions due to a racial tendency which leads them to respond poorly to the antigenic action of diphtheria toxin and to the bacillus protein.

Following injections of toxin-antitoxin children developed for the most part immunity to diphtheria in from two to five months. Slightly more than 87 per cent of children showed a negative Schick five months after T. A. T. injections.

Zingher states that most children under six months of age are temporarily immunized to diphtheria through inherited maternal antitoxin. Such children show a negative Schick. This immunity is rapidly lost after the infant reaches the age of six months.

To guard against error in interpreting the Schick list a control test should always be employed since 20 to 25 per cent of children show negative pseudo-reactions.

Zingher states that all children from six months to five years should be injected with toxin-antitoxin, the omission of the Schick test being of little consequence. Older children and adults should only receive T. A. T. on showing a positive Schick.

According to Schroeder who immunized children with T. A. T. five and a half years ago the immunity then conferred still persists. It is too early as yet to state whether or not the duration of immunity is indefinite.

FOCAL INFECTION.

Sumner, Percy: Sub-normal Accommodation; the Result of Focal Infection. *American Journal of Ophthalmology,* Vol. 4, p. 351, March, 1921.

The writer details three cases of subnormal accommodation, in all of which diseased tonsils were found, only one of which he was able to get an operation on. This case improved promptly.

He reminds us, however, that there is another cause of this trouble, namely neurasthenia, and that the symptoms are different from the infectious type.

The neurasthenic type complain more of their symptoms in the early mornings, and get better as the day advances and their eyes get "limbered up."

The symptoms of the infectious type, however, are similar to presbyopia, in that their discomfort increases as the day progresses.

He advises that the power of accommodation be carefully ascertained in all refractive cases, and after careful correction of any refractive errors, if the accommodation is still weak, to search for some source of infection.

He leaves out entirely the consideration of glaucoma as a possible source of weakened accommodation in the class of cases that he is referring to.

EXTRINSIC OCULAR MUSCLES.

Bannister, J. M.: Extrinsic ocular muscles; their dynamics and suggestions as to treatment of muscular imbalance. *American Journal of Ophthalmology,* Vol. 3, p. 878, December, 1920.

The writer pleads for a more careful examination of the functions of the extrinsic ocular muscles in all cases of asthenopia, as well as a careful correction of any ametropia that may be present.

He goes on to state what he has found to be the true normal degree of strength of the extrinsic muscles, based on his experiments on one hundred normal persons, and finds that his results show a much lower power of adduction than most writers have found.

They give from 30 degrees to 50 degrees as the adduction power of normal eyes, he finds that the average person has about 14 degrees of adduction. The normal power of abduction is about 6 degrees, but he finds that many perfectly normal eyes fail to reach this amount of abduction. He claims that the usual method of measuring the power of adduction by prisms base out is entirely wrong and misleading, and the only true method is to determine the near point of convergence. This, expressed in metre angles, will indicate the true maximum of convergence. He also found that the ratio of convergence to divergence, as usually stated to be from three to one, does not, by any means, always hold good. The power of divergence may be correctly measured by prisms base in, and in his series of experiments averaged 7 degrees.

Sursumduction and deorsumduction he found to be about equal, namely 2 degrees.

His method of treatment is first to carefully correct any ametropia that may exist, then, if the asthenopia is not relieved, he operates on his cases of exophoria. When they cannot converge thirteen metre angles —in other words, when they cannot see a dot singly at three inches—he strongly advises doing a tucking operation in one, or both, internal recti, and reserves tenotomies of the external recti for those cases in which a tucking of the internal recti do not correct. He advises the same operation on the appropriate muscles for cases of esophoria and hyperphoria.

He gives rules for determining whether we are dealing with convergence weakness or divergence excess.

The discussion which followed the reading of this paper before the Colorado Congress of Ophthalmology and Otology brought out many divergent views. The paper is a most interesting and important one, and the original paper should be read by every ophthalmologist who does any refractive work.

RINGWORM.

Hodges, Robert S.: "Ringworm of the Nails." Archives of Dermatology and Syphilology, Vol. 4, No. 1, July, 1921.)

Those who are interested in this heretofore obscure affection will be very well paid by reading the original article by Hodges. The author is not a medical man, but he is well prepared to give a report of his studies of ringworm infection of the nails. He having been a victim of the disease thirty-five years and a scientific man, gave him the opportunity for his thorough study of the affection.

Summary and conclusions reached are as follows: "The conclusion reached, based on the work presented in this paper, that onychomycosis is far more prevalent, especially in the southern part of the United States. than is generally recognized, and that large-spored ectotrix trichophytons are largely responsible for the affection. A conservative estimate would indicate a ratio of at least one case to each 500 of population, a prevalence ten times greater than reported by Foster among foreign immigrants at Ellis Island.

"Of the sixteen cases of onychomycosis observed, cultures have been obtained in twelve of the thirteen cases in which cultures have been attempted at the time of making this report. The entire absence of a history of ringworm of the scalp associated with any of these cases would, it is believed, exclude the probability of endotrix trichophytons as a cause. That eleven of these cases were caused by large-spored ectotrix tricophytons is indicated by finding in associated skin lesions

lanugo hairs attacked by a fungus apparently of this variety. This conclusion is further strengthened by their rapidity of development on culture mediums and other cultural characteristics.

"The species, pending their more definite classification, are designated as Trichophyton 'A,' Trichophyton 'B,' and Trichophyton gypseum, variety 'C.'

"Trichophyton 'A' (seven cases) produces white downy cultures on Sabouraud's maltose agar, usually showing a pink color on the surface and purplish red from the back. Drop cultures show pyriform conidia borne on simple and branched conidiophores, and more rarely characteristic slender fuseaux.

"Trichophyton 'B' (four cases) produces on Sabouraud's maltose agar pronounced white downy cultures, tinged with yellow as they grow older. Drop cultures show pyriform conidia, not very abundant.

"Trichophyton gypseum, variety 'C' (one case), produce on Saboraud's maltose agar rapidly growing white downy cultures, cream color later. Drop cultures show spirals, fuseaux and spore clusters characteristic of the gypseum group. This group belongs to the small-spored ectotrix variety, and is believed to be reported for the first time as generally accredited to Epidermophyton.

"That the species designated 'A' and 'B' are specifically inclined to attack the nails is indicated by the frequency with which the nail affection follows and coexists with ringworm of the hands and feet among several members of the same family. The possible relation to the group of which Trichophyton rosaceum and T. equinum are members, or their being new species, is considered, but pending a comparative study with Sabouraud's type cultures definite classification is withheld for a future report in which it is hoped to include a study of additional cases and their etiology.

"The frequent coexistence of tinea cruris with these nail conditions and the demonstration that in one case the fungus was the same as that in the nail, suggests that species of Trichophyton may be responsible for many cases of this affection that is so prevalent and that is generally accredited to Epidermophyton. Some tests of the Sabouraud maltose and glucose are given which show them to be very much the same composition, both consisting largely of dextrose (glucose). This accords with comparative results of cultures on mediums prepared with these two crude sugars.

"That the nail affection will yield to persistent treatment with Whitfield's ointment, combined with thorough scraping of the nails, is demonstrated by a complete cure of two patients in whom all of the nails of one hand were affected."

TYPHOID VACCINATION.

Results of Antityphoid Vaccination in the World's Armies. Editorial *Journal A. M. A.*, Vol. 76, No. 23, p. 1576.

"It is strange that of all nations engaged in the World War, only Germany expresses doubt as to the efficiency of antityphoid vaccine.

It is also surprising to note that a review of the literature indicates that German skepticism results from the inefficiency of the vaccine used, and faulty materials."

Paratyphoid bacilli were not often used, and there were many more cases of paratyphoid than typhoid.

In all other armies, the value of antityphoid vaccination was very evident.

During the first two years of the war, the British records show the morbidity rate fourteen times greater, and the mortality rate forty-two times greater in the unvaccinated.

One very striking incident occurred among 211,000 French troops where inoculation was compulsory. There were 154 cases, and of these, 108 occurred in men who escaped vaccination through fraud.

Figures for both the Italian and Japanese armies demonstrate the effectiveness, but of all armies, the most striking results were obtained by the Americans where from April, 1917, to November, 1919, but 1050 cases of typhoid occurred with 156 deaths among the four million men, and it must be remembered

that at times the men were in heavily polluted regions.

The contrast between the Spanish War with a typhoid death to each seventy-one soldiers, and the record in 1917 with but one death from typhoid to each 25,641 soldiers certainly shows the value of prophylactic vaccination, and a lesson that can be carried to every community.

DUST INHALATION.

Jarvis, D. C.: "A Roentgen Study of Dust Inhalation in the Granite Industry." (*The American Journal of Roentgenology,* Vol. VIII, No. 5, p. 244, May, 1921.)

Dr. Jarvis has made an extensive study of dust inhalation with special reference to granite dust. He finds that many of the changes found in the lungs of workers in this type of occupation develop lesions similar to that produced by infection. He summarizes as follows:

"1. Film densities are influenced by mouth breathing, nationality and occupational position.

"2. The machinery must be considered as a source of dust as well as the material being worked.

"3. A standard exposure technique should be adopted as early as possible in a study of dust inhalation in order that one may feel sure of variations of density.

"4. While classification of films is helpful, the lung lesion in a dust worker is like the shifting sand of the sea and each film should be judged by its own individual densities as portraying the pathology in the making in that particular individual.

"5. Evidence tends to show that the lesion always remains peripheral and the lung reaction to an irritant is evidenced by densities appearing from the hilus outward.

"6. It seems possible to parallel films of tuberculosis, pneumonia and various other pathological conditions of the lungs with the films of granite cutters, there being an absence of clinical activity in the latter, the mechanical irritant producing the same lesion as a bacterial one.

7. It would seem that many densities are being diagnosed as tuberculosis which should be considered as densities of pneumoconiosis.

PROPAGANDA FOR REFORM.

"National Iodine Solution" Not Admitted to N. N. R.—The Council on Pharmacy and Chemistry considered National Iodine Solution, a proprietary of the National Drug Co., because inquiries indicated that it was brought extensively to the attention of physicians. The name implies that it is a solution of iodin, and the inference is given that it has the advantages of iodin without the disadvantages. According to the label, "each fluid ounce represents three grains Proteo-albuminoid compound of iodin (National)"; also an alcohol declaration of 7 per cent is made. Otherwise no information is given as to the composition either of the "solution" or of "Proteo-albuminoid compound of Iodine." Analysis in the A. M. A. Chemical Laboratory indicated that each 100 c.c. contains about 7 c.c. of alcohol, 0.5 gm. of zinc sulphate U. S. P., 0.03 gm. iodin (the solution gave tests which indicated a very small amount of free iodin; most of the iodin was in the form of ordinary iodid), 0.01 gm. protein and some hamamelis water. While the preparation is claimed to contain 3 grains "proteo-albuminoid compound of iodine," yet the sum of the protein and iodin is equivalent to less than one-fifth grain. The Council reports that it is evident that "National Iodine Solution" is not a solution of free (elementary) iodin as the name suggests; instead, it appears to be a solution of zinc sulphate in witch-hazel water containing less than 0.03 per cent of combined iodin and not more than a trace of free iodin; that it is sold under unwarranted therapeutic claims, and that a similar or identical preparation sold to the public for the self-treatment of gonorrhea by the National Drug Co. as Gonocol has been declared misbranded by the Federal authorities. (*Jour. A. M. A.,* June 4, 1921, p. 1592.)

Proteogens in Syphilis.—C. F. Engels, Tacoma, Wash., reports that two persons

came to him who had been treated with Proteogen No. 10 for almost a year. Both patients were four-plus to the Wassermann test. He writes: "The tragedy of the whole thing is that here are two people, at least, who have been deprived of adequate treatment for a year, spending their money for ignorance and fakery, getting worse instead of better, and all because of the cupidity of these people (the promoters of the Proteogens) and their success of putting over on some of the weak sisters of the profession this pseudo-scientific bunk." The Proteogens have been the subject of an extensive report by the Council on Pharmacy and Chemistry, which declared the twelve Proteogens unadmissible to New and Nonofficial Remedies because their composition is secret; because the therapeutic claims made for them are unwarranted, and because the secrecy and complexity of their composition makes their use irrational. (*Jour. A. M. A.*, June 4, 1921, p. 1593.)

Reolo.—This is a "patent medicine" which is based on the theory, which has no scientific foundation, that all disease is due to a deficiency or variation in the inorganic constituents—the "cell salts"—of the cells and blood. Reolo is claimed to furnish the needed cell salts and thus to cure diseases due to the deficiency. The asserted discovery of Reolo is described thus: "Dr. A. L. Reusing has finally succeeded in combining by electrical treatment the phosphates of calcium, sodium and iron with the phosphates of potassium and magnesium and has obtained a perfect combination of these revitalizing Cell Salts that he has named 'Reolo' * * *" The A. M. A. Chemical Laboratory reports that Reolo consists of grayish-brown tablets having a sweet, chocolate-like and faintly bitter taste. Very small quantities of a phosphate and traces of magnesium and of an iron compound were present. Large amounts of calcium carbonate (chalk) and sucrose (cane sugar) were present. The tablets did not appear to be medicated in the usually accepted sense. From this examination it would appear that Reolo is essentially a mixture of sugar and chalk. (*Jour. A. M. A.*, June 11, 1921, p. 1697.)

"Aspirin Bayer" and the Sterling Products Co. — Shortly after the United States entered the war, the Alien Property Custodian took over the property of Bayer and Co., inc. The Sterling Products Co. acquired the pharmaceutical end of the Bayer concern. After that the Winthrop Chemical Co. was incorporated and seemingly secured control of all the Bayer pharmaceutical specialties, except "Aspirin." The Bayer Co., it was announced, had been merged with the Sterling Products Co., and "Aspirin-Bayer" added to the latter firm's list of "patent medicines": Cascarets, Danderine, Papes Diapepsin, California Syrup of Figs, Neuralgine and Dodson's Livertone. Just what relationship exists between the Winthrop Chemical Co. and the Sterling Products Co. we do not know; the "Bayer Cross" is used on the label of the Winthrop products. As the court has ruled that on prescriptions calling for "Aspirin" the Bayer products must be dispensed, physicians should prescribe acetylsalicylic acid and not "Aspirin." (*Jour. A. M. A.*, June 11, 1921, p. 1697.)

Disappointments in Endocrinology.—In the current enthusiam for so-called endocrinology, medicine may become humiliated by the drift toward a sort of pseudoscience bolstered up with meaningless words and unfounded assumptions. Stewart deserves the thanks of the medical profession for the fearless and critical manner in which he has questioned (Endocrinology, vol. 5, p. 283, May, 1921) much of the verbal rubbish that goes under the designation of the endocrinology of the suprarenals. There is something stinging, yet deserved, in its implied rebukes, in the words of Dr. Stewart: "On the whole," he says, "it must be granted that hitherto the attempts made to evoke in animals a well-marked syndrome characteristic of adrenal deficiency have been singularly disappointing. The contrast is great when we leave this desert, where the physiologists and experimental pathologists have

wandered, striking many rocks but finding few springs, and pass into the exuberant land of clinical endocrinology, flowing with blandest milk and honey, almost suspiciously sweet." How much longer will the medical profession continue to merit such criticism? Just so long as the profession continues to give serious consideration to pseudoscientific rubbish promulgated by the exploiters of organic extracts. (*Jour. A. M. A.*, June 11, 1921, p. 1685.)

Mon-Arsone Not Admitted to N. N. R. —The Council on Pharmacy and Chemistry reports that Mon-Arsone was put out by the Harmer Laboratories Co. as "A new and non-toxic arsenical for the treatment of syphilis" and that it was claimed that the drug had a therapeutic value equal to arsphenamine but was devoid of toxic action. Chemically, Mon-Arsone is related to sodium cacodylate, which latter has been proved inefficient in the treatment of syphilis. After examining the available evidence, the Council voted not to admit Mon-Arsone to New and Nonofficial Remedies and held that the claim that Mon-Arsone has a therapeutic value equal to that of arsphenamine was unwarranted; that Mon-Arsone should not be used except under conditions that justify the experimental trial of an unproved drug, and that the advertising propaganda for the drug by the Harmer Laboratories Co. was to be deprecated. When the Council sent its report to the Harmer Laboratories Co., prior to publication, the firm announced that the claim that Mon-Arsone is therapeutically equal to arsphenamine had been abandoned. In publishing its report, the Council endorsed the recent warning against the use of untried medicaments issued by the U. S. Public Health Service. It also calls attention to a report on the effect of Mon-Arsone on experimental syphilis recently published by H. J. Nichols, which showed that the drug, when tested on rabbits infected with experimental syphilis, showed no spirocheticidal power. (*Jour. A. M. A.*, June 18, 1921, p. 1781.)

Libradol (manufactured by Lloyd Bros.), according to a "readily removable label" on a trade package, may be used in "colds, croup and acute bronchitis, in local congestions, in lung troubles and acute inflammations of this or any other organ, especially if pain or soreness be present, in lumbago, sciatica or in rheumatic pains of the points or muscles. Applied to the forehead, it induces sleep." Libradol is offered in two forms, Libradol "Mild" for infants and supersensitive persons which is said to be "destitute of drug energy," and Libradol "Regular" which is "highly medicated," the "constituents" being "dracontium, sanguinaria, cephælis, melaleuca, lobelia, laurus, capsicum, tobacco." An examination of the information submitted by Lloyd Bros. showed Libradol to be in conflict with the principles and rules that govern in the acceptance of articles for New and Nonofficial Remedies: 1. Composition: The information gives little idea as to the actual composition of the preparation. 2. Indirect advertising: The recommendations for the use of Libradol which appear on the trade package is prone to lead the public to depend on it in cases where definite treatment is imperative. 3. Unwarranted therapeutic claims: Libradol is recommended in a great variety of conditions and is especially claimed not only to relieve pain, but to remove the cause of pain. No evidence for the claim was submitted. 4. Name: The name, derived from Dolor and Liber, suggests the claimed action of the preparation (the relief of pain) rather than the composition. 5. Irrational composition: It is quite possible that Libradol will relieve pain in certain instances, but this is no justification for the use by physicians of cataplasms containing or made from skunk cabbage, bloodroot, ipecac, melaleuca (oil of cajeput), lobelia, laurus camphora (camphor?), capsicum and tobacco. The combination is thoroughly irrational. The Council declared Libradol inadmissible to New and Nonofficial Remedies because its composition is complex, irrational and semisecret, and because its name and the unwarranted therapeutic recommendations made for it will lead to its ill-advised use. (Rep. Council Pharm. Chem., 1920, p. 65.)

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THE BOARD OF MEDICAL EXAMINERS.

THE JOURNAL is pleased to publish the personnel of the first Board of Medical Examiners appointed under the provisions of the recently enacted Stuart Bill. Three members of the newly-appointed Board served on the Regular Board of Medical Examiners, all but one are members of the Florida Medical Association, and in making his selections, Governor Hardee, with one exception, made his appointments from a list of names submitted to him by a committee representing the Florida Medical Association. The following comprise the Board:

James M. Jackson Miami
Wm. M. Rowlett Tampa
Ralph N. Greene Jacksonville
N. A. Baltzell Marianna
E. G. Peek Ocala
J. A. Hague Alton
John M. Mann Lake Butler
J. L. Crump Winter Haven
J. B. Griffin St. Augustine
W. J. Buck Brewster

The Board has already convened, elected officers, and adopted rules and regulations for their guidance. Dr. James M. Jackson was elected President of the Board, Dr. W. J. Buck Vice-President and Dr. Wm. M. Rowlett Secretary. The President and Secretary both held similar positions on the old Regular Board of Medical Examiners. Of the rules adopted, ones the profession will be most interested in, are:

The provision for a semi-annual report to be published in the *Journal of the A. M. A.*, and the JOURNAL OF THE FLORIDA MEDICAL ASSOCIATION.

The members of the Board will serve without compensation. Their traveling expenses to and from the examinations will be paid out of the fees collected, and the balance placed in a fund to be used for the best interests of the profession.

The Board will not issue temporary certificates.

The requirements for application are:

Allopaths must be graduates from a Class A college.

Eclectics, a diploma from the Eclectic Medical College of Cincinnati.

Homeopaths, a diploma from either Hahnemann Medical College and Hospital of Chicago or Philadelphia, the New York Homeopathic Medical College and Flowers Hospital, or the University of Michigan Homeopathic Medical School.

They have provided for an attorney, who shall act as legal adviser and assist in any prosecutions that may develop.

Governor Hardee is to be congratulated on the excellent men he has appointed on this most important Board. THE JOURNAL extends the hand of cooperation to the Board, individually and collectively, in promoting in every way possible the interests of organized medicine. All of the members have large practices, and are making great sacrifices in order to place the standard of the profession at the head of the list of states. As predicted in THE JOURNAL a few weeks ago, the days of men of low professional standards, and the medical quacks and charlatans are numbered in the state of Florida. Every County Society should appoint a strong Legislative and Public Policy Committee to cooperate with the Board in their work, and to see that every physician in their individual county has registered his license, as provided by the law.

We publish in another column the full text of the Rules and Regulations adopted by the Board at its meeting of organization.

NEEDED MEDICAL LEGISLATION.

It is the intention of THE JOURNAL to discuss from time to time needed medical legislation in which the members of the Florida Medical Association should interest themselves from now until the legislature meets again two years hence. It was plainly shown at the recent session of the legislature that when the medical profession interests itself in a worthy measure that they can make themselves felt and that the various strong civic organizations will back the profession. The Stuart Bill providing for a composite board of medical examiners would have met the same fate that similar bills have during the last decade if it had not been for the very active interest shown by the medical profession.

It is no credit to the State of Florida or indeed to the medical profession of the state that while Judges of the Circuit Court receive a salary of five thousand dollars a year, the State Health Officer is paid but three thousand dollars, only five hundred dollars more than half that paid the Judges. Surely no man of a reasonable mind would think that this is a fair compensation for an officer responsible for preserving the health of the commonwealth of the state. A bill introduced during the recent session of the legislature abolishing the State Board of Health and providing that the State Health Officer be appointed by the Governor, carried a rider that his compensation be fixed at $4,-200.00 a year. The bill failed of passage and no determined effort was made to provide for an increased compensation.

A determined and properly laid campaign should be commenced to provide adequate compensation for our State Health Officer. Such a campaign should not be considered in the interests of the individual that happened to hold this office at the time the campaign was being waged, but should be considered in the interests of the public health welfare. At the present time the state administration is fortunate in having secured the services of a very capable man to head public health activities who can afford to carry on in the interests of public service, and his acceptance of the office is purely one of service.

The compensation of the State Health Officer should be not less than five thousand dollars. A Governor of one of our neighbor states is credited with having recently stated that there was not a county in his state in which he could not find at least one physician earning ten thousand dollars a year in caring for the sick, and that it was his purpose to give each county in his state a health officer with an equal compensation, properly going on the assumption that if a doctor was

worth ten thousand dollars in curing the sick one employed for the purpose of preventing sickness was of equal worth.

THE JOURNAL therefore thinks it perfectly proper, in fact a duty, for every physician to use his influence to secure legislation that will permanently place the compensation of the State Health Officer at such a figure that properly qualified men can afford to undertake this important public office.

PROCEEDINGS OF THE SECOND ANNUAL MEETING OF THE FLORIDA RAILWAY SURGEONS' ASSOCIATION HELD AT PENSACOLA, MAY 9, 1921.

The Second Annual Meeting of the Florida Railway Surgeons' Association was called to order by the President, Dr. W. P. Adamson, at 11 a. m., May 9, 1921.

The Secretary presented the names of forty-one applicants for membership in the association. The question of the eligibility of certain of these applicants for membership arose on account of their non-affiliation with the Florida Medical Association. The matter was informally and freely discussed. Dr. L. M. Anderson, of Lake City, moved that the Secretary notify all applicants that they must affiliate with the Florida Medical Association within six months, and that all names not so affiliated within that period of time be stricken from the rolls. The motion was duly seconded and carried.

The report of a special committee appointed to draw up a fee schedule was read and, on motion duly seconded, received as information.

It was moved and seconded that a committee of three to include the President and Secretary be appointed to discuss the fee schedule with the various railroads operating in Florida. The motion was carried. Dr. L. M. Anderson was appointed by the chair to serve with the incoming President and the Secretary.

Upon motion duly seconded and carried, the chair appointed Dr. E. W. Warren, Dr. Graham E. Henson and Dr. Frederick J. Waas a Committee on Necrology with instructions to prepare suitable resolutions on the deaths of Murray W. Seagears, President of the Association at the time of his death, and Moses St. Peter.

The election of officers for the ensuing year resulted as follows:

President, Dr. James H. Pittman, Jacksonville.

Vice-President, Dr. J. S. Turberville, Century.

Secretary-Treasurer, Dr. E. W. Warren, Palatka.

The following papers were read and discussed:

"The Indirect Influence of the Railroad Surgeon," Robert B. Slocum, M. D., Superintendent and Medical Director, Atlantic Coast Line Railroad Company.

*"Accident Hernia from the Standpoint of Liability," L. S. Oppenheimer, M. D., Tampa.

"Hernia," Frederick J. Waas, M. D., Jacksonville.

"The Report of Some Interesting Fractures: With a Discussion of Their Management," J. S. Turberville, M. D., Century.

"The Importance of Conserving Vital Power in Rendering First Aid," Mary Freeman, M. D., Perrine.

"Subconjunctiva Injections in Eye Injuries," W. Herbert Adams, M. D., F. A. C. S., Jacksonville.

*"The Hodgen Splint," Robert B. Harkness, M. D., Lake City.

*Read by title in the absence of the essayist.

STATEMENT OF THE INCOMING HEALTH OFFICER AS TO THE STATUS OF STATE BOARD OF HEALTH: FOR PUBLIC INFORMATION.

Upon assuming the duties of State Health Officer on June 21st, I found that the new Board of Health had felt obliged to curtail the work of the State Board of Health to the extent of abolishing many future activities, including the establishment of branch laboratories, the practical abolishment of the two

highly necessary Bureaus of Child Welfare and Venereal Disease Control, and also to curtail the work of the vitally important Bureaus of Sanitary Engineering, Vital Statistics and Diagnostic Laboratories for the reason that the legislature had cut the appropriation for the State Board of Health from one-half mill to one-quarter mill.

As the result of the action of the Board in retrenchment, I found the desk of the State Health Officer piled high with just protests against the abolishment of desirable activities, protests based on information promulgated by the retiring Board of Health to the effect that the State Board of Health would have ample funds to continue present operations and to promote new work.

I quote a paragraph from a letter from Mr. W. L. Tilden, president of the Orlando Chamber of Commerce, regarding the opening of a new and highly desirable branch laboratory in Orlando:

"We are reliably informed by the retiring Health Board that they had saved by their economical administration, for the State Health Board, approximately $100,000.00 during their tenure of office. They have also ample funds to prosecute the program contemplated by the Board, and they were going to recommend to the legislature, which has just adjourned, a reduction in millage for the provision of expenditures of the State Health Department."

Under the circumstances, it seems only fair and just that the incoming Board of Health lay its cards on the table and make to the people of Florida a statement of the actual facts as they exist.

While it is true that we have no positive knowledge of the amount of the State Health appropriation because the new tax assessment list has not yet been prepared, from estimates derived from various sources it is presumed that the present State Board of Health will receive from the quarter-mill tax:

For the year ending June 1, 1922, $95,000.
For the year ending June 1, 1923, $100,000.
For the year ending June 1, 1924, $105,000.
For the year ending June 1, 1925, $110,000.

It seems fair to assume that we cannot depend on more than $100,000.00 per year for the next two years, until legislature can again meet.

The report of the retiring State Board of Health shows that $167,468.46 was expended in 1919, that $150,219.44 was expended in 1920. The auditor's records show that during the first five months of 1921, from January 1st to May 31st, inclusive, there was expended $112,271.21, from which should properly be deducted, as not being an item of current running expense, $22,630.13, which was paid on the laboratory building under construction in West Palm Beach, leaving a net expense for five months of $89,641.08, or a monthly expenditure of $17,928.21, which means a yearly expenditure of $215,138.52.

Since the yearly appropriation under the half-mill tax averaged $185,000.00 per year, it is evident that should the activities of the State Board of Health have been continued on the old basis, it would have been necessary to dip into the surplus to carry on the work, since the expenditure would have exceeded the total income under the half-mill assessment.

Should the present Board attempt to carry on the work as in progress during the first five months of 1921, it would spend more than twice as much as its income under the quarter-mill assessment.

So far as the reputed $100,000.00 saving is concerned, as shown by the published reports of the retiring Board of Health as well as the books in the auditor's office, the retiring Board started in on January 1, 1919, with an available cash balance of $50,405.69 and they ended on June 1, 1921, with a cash balance of $82,972.15, from which must be deducted the amount owing on the uncompleted contract for the laboratory building under construction in West Palm Beach, approximately $13,950.00, leaving an available cash balance of $69,022.15. It is evident, therefore, that there was a saving, during the period from January 1, 1919, to June 1, 1921, of but $18,616.46.

Without going into further detail, it is apparent: First, that the average expense of the State Board of Health, not counting $40,000.00 expended for the laboratory at West Palm Beach, for the past three years approximates $165,000.00 per year. Second, provided that the entire surplus now on hand is added to the income to be derived from the quarter-mill tax, it will give a total for the next two years of approximately $264,000.00, or a yearly average of $132,000.00.

It goes without saying that to keep the expenditure within this amount it is, and has been, necessary to curtail the present work and, further, that promotion of new activities at state expense is impossible.

It is evident that the members of the last legislature were misinformed as to the needs of the State Board of Health. It is inconceivable that any fair-minded body of men having any knowledge at all of the immense economic value of modern health work and of the crying need of this state along that line, especially in venereal disease control, malaria eradication and child welfare, would have cut down the appropriation to a point where the functioning of the State Board of Health is seriously hampered, unless they were misinformed.

Owing to the actual lack of funds, the State Board of Health must necessarily mark time and must curtail the work of the vitally essential Bureaus of Sanitary Engineering, Vital Statistics and Diagnostic Laboratories, and can only hope to, in a very restricted manner, keep alive the Bureaus of Child Welfare and Venereal Disease, and, so far as is in its power to do so, to make sanitary surveys of different localities, to promote local health activities in the various counties and communities, to educate the people along sanitary and hygienic lines and as to the needs of the state, so that the next legislature may see fit to make an adequate appropriation.

The present Board will take advantage of every opportunity for assistance offered by the United States Public Health Service and other services, by individuals, societies and organizations, and will do all in its power to assist in any way possible any worthy local movement instituted and financed by counties or communities.

Raymond C. Turck.

PERSONAL ITEMS AND NEWS NOTES.

The first meeting of the Composite Board of Medical Examiners, for the purpose of granting licenses to practice medicine, will be held in Jacksonville August 1st, under the presidency of James M. Jackson.

Dr. John E. Boyd, of Jacksonville, has recently been designated by the Bureau of War Risk Insurance, as Chief Medical Examiner of Unit Number fourteen.

Dr. H. E. Watts, of Ocala, was a recent visitor in Jacksonville.

Dr. Gerry R. Holden, of Jacksonville, is in New York taking up postgraduate work in connection with radium therapy. Dr. Holden will return to Jacksonville during September.

CLINICAL NOTES

BLOOD PRESSURE AND ITS RELATION TO CATARACT AND GLAUCOMA.

C. Drew, M. D., Jacksonville, Fla.

In modern works on ophthalmology the causes of cataract are given as a physiological process incident to age, choroidal disease, defective nutrition, diabetes, nephritis, exposure to great heat, ergotism, uric acid diathesis, eye strain, traumatism and arteriosclerosis. These diseases, especially choroidal disease, nephritis, uric acid diathesis, constitute a group frequently found in cataract and glaucoma. They represent, however, the primary cause of these diseases and the increased intra-ocular pressure, resulting from them is the direct cause of the ocular diseases in question. The ocular contents are encased in the unyielding sclera and this is enclosed in the hard unyielding bony orbit, so that when blood pressure is increased there is no yielding. The lens is forced forward against the iris—the iris

against the ciliary outlets, resulting in cataract, glaucoma or both. It may be asked that why in some conditions of glaucoma the media are clear and the symptoms those of chronic glaucoma, rather than the explosive condition with the turbid vitreous found in acute glaucoma. Some conditions involving high blood pressure are more or less chronic, gradually permitting adjustment of intraocular conditions, while others are not so and allow no opportunity for adjustment of such conditions. Should further observations demonstrate the correctness of these observations the treatment of high blood pressure will be a valuable adjunct to local treatment.

REPORT OF CLINICAL CASE.

W. Herbert Adams, M. D.,
Jacksonville, Fla.

J. S. Male, age 26, machinist, married, healthy, one child, personal and family history negative. Inveterate cigarette smoker. Rooms and boards at his mother's home.

While his wife and baby were out one evening, and he was in bed smoking, he probably dropped asleep, and the bed clothing caught fire from his cigarette. He awakened and threw the mattress and bed clothing out of the window. His mother, undoubtedly, repremanded him very severely for his carelessness.

The next day he suddenly lost his vision completely. He was brought to my office by his wife, and had to be led about, and apparently there was not even light perception.

I examined his eyes very carefully and found that they were normal in every respect. The pupils were equal and reacted perfectly to light, the fundi were absolutely normal in every respect.

He claimed that he was not able to perceive a strong light which was flashed in his eyes.

The diagnosis was hysterical blindness. Treatment: Small doses of bromides. It was strongly impressed upon him that he would be able to see the next morning. As a matter of fact it was two days before he regained his sight, which was regained as suddenly as it was lost.

This case of hysterical blindness was, undoubtedly, caused by the scolding his mother gave him, and was intended to excite her sympathy. This is a rather unusual case, occurring as it did in a healthy young man, and from such a trivial cause.

RULES AND REGULATIONS OF THE BOARD OF MEDICAL EXAMINERS OF THE STATE OF FLORIDA.

Jacksonville, Fla., June 13, 1921.

At the organization meeting of the State Board of Medical Examiners the following rules and regulations were adopted for the guidance of the members of the Board:

Section 1. This Board shall be known as the Board of Medical Examiners of the State of Florida.

Sec. 2. The officers of the Board shall consist of a President, Vice-President and Secretary-Treasurer, elected by a majority vote of the members present.

Sec. 3. The President shall preside at all meetings of the Board, and in his absence the meeting shall be presided over by the Vice-President.

Sec. 4. The Secretary-Treasurer shall keep a correct account of the transactions of the Board, and shall make a semi-annual report to the Secretary of the State Medical Association, the American Medical Association, the State and National Eclectic Association, and the American Institute of Homeopathy.

He shall make provision at the place of meeting, designated by the Board, for conducting the examination and provide the necessary stationery and material for the use of applicants. He shall carry on and conduct all the correspondence of the Board, and as Treasurer be custodian of all the funds paid by the applicants. He shall pay all the expenses of the Board, including the traveling expenses of the members to and from the place of examination and five dollars per diem while in actual attendance. The balance of the fees collected shall be placed

in a sinking fund to be used as the Board deems best for the interest of the profession.

The Secretary, for his service, shall be paid twenty-five per cent of the gross receipts.

Sec. 5. The Board shall appoint an attorney who shall act as legal adviser and assist in any prosecutions that may arise; said attorney must reside in the same community as the Secretary and is to receive a retaining fee of $100.00 per annum.

Sec. 6. The Secretary-Treasurer shall assign to each member his subject for examination of applicants, the adaptability of the member for his subject always receiving foremost consideration, and will embrace the following subjects in their regular order, viz: Anatomy, Physiology, Hygiene, Surgery, Gynecology, Obstetrics, Chemistry-Medical Jurisprudence, Therapeutics, Pathology, Diagnosis and Practice of Medicine.

Sec. 7. The first examination shall be Anatomy beginning at 8.30 a. m. of the day designated by the Board, and two hours be given to complete it. The second, Physiology-Hygiene, at 10.30 a. m. and two hours be given to complete it. Subjects to be continued in the above order until all examinations are completed.

Sec. 8. An average of seventy-five per cent (75%) shall be required on the whole ten branches, and no certificate shall be granted an applicant who falls below forty per cent (40%) in any branch.

Sec. 9. All examinations shall be written and the applicant before he enters upon it will sign an agreement that he will not receive any information from any source during the examination. At the conclusion of the examination on each subject, the applicant will sign his number to his answers and deliver it to the examiner in that branch, prior to his leaving the room or place of examination. Each examiner is expected to be present while his subject is before the applicant. No applicant will be permitted to leave the room during the examination.

Sec. 10. The examiners are required to complete the grading of all papers and file said papers with their report with the Secretary within ten days following the examination. Any member failing to comply with this section will be fined the sum of five dollars ($5.00), said fine to be taken out of the expense account of said member by the Secretary-Treasurer when remitting for same. The Secretary shall collect all reports and notify the applicants not later than ten days after receiving said report. Failing to do this he will be fined ten ($10) dollars. The original report and examination papers are to be sent to the Secretary by registered mail.

Sec. 11. This Board will not issue temporary certificates, or licenses by reciprocity.

Sec. 12. Applicants failing three times in succession will not be again admitted until a course of study has been pursued, the minimum of which will be prescribed by the Board.

Sec. 13. Requirements for application are: Allopaths—A diploma from a legally chartered medical college of class "A." Eclectics—A diploma from the Eclectic Medical College, Cincinnati. Homeopaths—A diploma from either Hahnemann Medical College and Hospital of Chicago, or Philadelphia; the New York Homeopathic Medical College and Flowers Hospital, or the University of Michigan Homeopathic Medical School. (The above refers to those graduating since 1918. Prior to this date the college an applicant graduated from must have been of reputable standing at the time he graduated). A recent photograph, at least two letters of recommendation from legally qualified, reputable physicians, and a fee of $25.00. No fee will be refunded because of failure to pass the examination, and no examination paper will be reopened by an examiner after being reported to the Secretary.

Sec. 14. Each applicant, before coming before this Board, is required to make the following affidavit:

I,....., who, being duly sworn, say I am the person referred to in the foregoing application, and that the photograph attached hereto is a true picture of myself, and that the statements made herein are true in every respect; that I am the person named in the

diploma which I will display before the Board, and am the lawful possessor of same; that I will not receive or give any information, from any source, during the examination. In the event I am licensed by your Board I hereby agree to adhere at all times to the well recognized lofty principles governing the reputable practice of medicine and surgery; that I will not engage in the division of fees under any guise whatsoever, nor knowingly permit agent or associate of mine to do so; that I will exercise, to the best of my ability, a constructive interest in the practice of my profession. I hereby affirm that I have never been, or never will be, an itinerant or advertising physician; that I have never been convicted of a crime involving moral turpitude; that I will never practice medicine under a false or assumed name, or impersonate another practitioner of a like or different name; that I will not practice intemperance in the use of ardent spirits, narcotics or stimulants to such an extent as to incapacitate me for the performance of my professional duties; that I have never, or will never, procure or aid, or abet in procuring a criminal abortion, and in the event I am ever called to attend a case of abortion or miscarriage, I will call a reputable consultant to advise with me; that I do solemnly swear that I will always support, protect, and defend the Constitution and Government of the United States and of the State of Florida, so help me God, and make me steadfast to keep this oath inviolate that it may be granted to me to enjoy life and the sacred practice of the art respected by all men in all times, knowing should I trespass and violate this oath the reverse will be my lot.

Signed.....

SEC. 15. These rules and regulations to be printed and a copy to be furnished each member of the Board for his guidance.

SEC. 16. At any regular meeting, by a majority of the members present, these rules can be amended. No proxies to be accepted.

JAMES M. JACKSON, M. D.,
President.

WILLIAM M. ROWLETT, M. D.,
Secretary-Treasurer.

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ORIGINAL ARTICLES

THE INDIRECT INFLUENCE OF THE RAILROAD SURGEON.*

ROBERT B. SLOCUM, M. D.,
Chief Surgeon, Atlantic Coast Line Railroad Co.,
Wilmington, N. C.

There are, I believe, very few medical men who do not believe fully in the law of the "survival of the fit." The fit do survive and the unfit do go down whether we are thinking of individuals or of nations. Of course, the natural corollary of this law is that we, both as individuals and as a nation, must be fit if we want to keep our "place under the sun." We also realize that a nation is made up of individuals; the nation cannot be strong unless the individuals are strong; at the same time unless the nation is strong enough to protect the individual he has a poor chance. It is Kipling's old saying "the strength of the pack is the wolf and the strength of the wolf is the pack." The experiences of the past few years have impressed this upon us all so strongly that it is hardly necessary to mention it at all.

Another lesson of the past few years is the importance of each man doing his "bit." Before the war there had been a tendency to loose sight of the individual in the mass. Now just what is our bit as railroad surgeons? The answer, or rather the attempt to answer that question, is my theme. I am passing over the main work that we are engaged in, *i. e.*, the actual treatment of patients; the importance of that is too evident to need mentioning. To strive to lessen both the time and the degree of disabilities is our first aim. Every time that we return a man to work 100 per cent efficient we are doing a real service to the company and to the nation; while every time we return a cripple we are giving them a load to carry in addition to the legitimate one that they already have. But in addition to this main work we are in a position to exert a wonderful influence upon one of the most important bodies of men in the country, the railroad employees. If we would take the same pride and interest in the physical condition of the men of our particular roads as the regimental surgeon, *e. g.*, takes in the men of his regiment and could work up some of that feeling of friendly rivalry and competition among ourselves we would be doing a great service to the company which we happen to be serving and, what is more important, to the nation which we all serve.

There are evidently two ways of getting a group of physically strong men: one is to keep out the weaklings and the other is to build up those that are already in. Here, as elsewhere, prevention is the essential thing. Every time that we reject a man for service we are helping to educate the public by causing them to consider how essential it is to be physically fit; just as people are coming to appreciate the fact that an uneducated man is handicapped in the race of life so they are now beginning to see that the same thing applies to the physically unfit. Of course, it takes a generation for the leven to begin to work, but it is already beginning to work and we should keep it working. A man who has failed because of his own lack of education is pretty sure to make every effort to give his children a chance to go to school; so a man who is rejected by some company for some remediable defect is pretty sure to see to it that his child has any such defect attended to. Then, too, we could do a great deal if we would go out of our way to try to influence every man rejected for such a defect to have it cured; we can go farther than simply

*Read before the Second Annual Meeting of The Florida Railway Surgeons' Association, at Pensacola, May 9, 1921.

advise, we can assist him in making the necessary arrangements for having the work done. The average man of this class has the idea that an operation for hernia, *e. g.*, is both so dangerous and so expensive as to be out of the question for him. Of course it is not what we are paid for to take the time to explain to such a man that the risk of life is almost nothing and the probability of permanent cure almost certain when done by a good surgeon: and it would not be strictly our duty to help to put him into such competent hands, but that kind of thing illustrates what I mean by our indirect influence. Consider, *e. g.*, the figures in the report of the Provost Marshal: of the men examined for the army something like 6.04 per cent were rejected for hernia. I have not been over the records of the company's examinations, but am sure that the percentage is about the same. If through our influence these men could be cured and made 100 per cent efficient we would be doing just that much to better the physical condition of the working men of the country.

By way of parenthesis I wish to say that such conduct on our part would do much toward raising our profession in the eyes of the public. You may not agree with me, but I am convinced that doctors do not stand as high in their communities, on the average, as they did a generation ago. A few years ago I heard an address by a leading university president to the American College of surgeons in which he said that he considered that now the medical profession was generally rated lower in the public esteem than any other of the so-called learned professions, and he included, *e. g.*, civil engineers. Some time after that I talked with a prominent lawyer and he said the same thing (I must admit that in the case of the lawyer it seemed to me a case of the kettle calling the pot black. But my own observation bears out the statement. When I was a boy the doctor in the town was generally held to be about the leading citizen and commanded the highest respect; excepting, perhaps, the minister. At that time, of course, there were few college men in the average small town except the professional men; now that is not so, in fact I am not sure but what there is more general education and culture outside the professions than in. This does not mean that we are not making progress but that others are progressing more rapidly. Another illustration of how we are looked upon now was afforded in my own state lately when we were having some trouble over legislation in regard to osteopathy: it was surprising and humiliating to find that many disinterested men and men of the highest prominence failed to see any real difference between the average osteopath and the average regular physician. We charge that osteopathy is largely a mercenary thing; that the osteopaths have but the one motive, to earn money (or rather to get it). Isn't this one way in which we can show that we are above that and that we are really trying to be of service to our fellows.

The first suggestion as to where we can exert a beneficial influence is then along the line of correction of physical defects. The second is our attitude towards preventive medicine and public health matters. Here again we are dealing with an important class of citizens. Take typhoid fever for example: if we would go at it whole-heartedly we could practically wipe out typhoid among railroad employees as it was done in the army. It is simply a matter of taking the trouble and time to convince the men of the necessity and real duty of anti-typhoid inoculation and good sanitation. Most of our men are young and at the age most susceptible to typhoid, so we would not only be a help to the road in lessening lost time for sickness but would at the same time be helping very much in keeping down the typhoid incidence of our communities. Here, again, the education side is the important one: through these men we are influencing the entire community. In the matter of smallpox; you must know that there is a considerable increase in smallpox throughout the country which means that we have been getting careless about vaccination. It is a simple matter whenever we come in

contact with the men, either upon examination for service or when treating them for some injury, to find out whether they are vaccinated and inoculated or not; if not, to put in a good word. It is not necessary to say that malaria is a source of considerable economic loss to the South. I hope that you have been following the talks and writings of Doctor Bass, of New Orleans, for he is doing a splendid work in trying to get the profession to realize that quinine is the cure for malaria when properly used; also quinine sterilization as one of the important factors in prevention. In the matter of venereal diseases, again we are dealing with perhaps the very most important class. Are we treating the question lightly and as a joke, or are we showing the men that we consider it a vital matter not alone to the individual but to the nation?

Then, too, our attitude towards the local and state health authorities; they are doing a splendid work almost everywhere and deserve our loyal and energetic support. I can not understand how any doctor who considers himself a good citizen can help his patients to evade the quarantine regulations, for example, but I see it done frequently. It is fundamental to good citizenship everywhere to support the enforcement of law even when we do not approve of the particular law. Here, as elsewhere, the right thing is to support it and, at the same time, to use our influence to get it repealed or modified if we think it is not as it should be. It is self-evident that each man cannot be a law unto himself; it is just as evident that mistakes are sure to be made by legislators as well as by everyone else. As a matter of fact some of our best men are now in public health work and are making as few blunders as any other class of men.

But to come to what is probably the most important part of our subject. There is hardly anything more essential today in our national life than to bring about a proper feeling between the management and the men; largely a matter of each side being able to see the other point of view. Now the railroad surgeon is above everyone else in a position to get that double point of view; he sees the employees' hardships and troubles and, at the same time, appreciates the difficulties under which the management are laboring. This is especially true in our particular line, *i. e.*, personal injuries and sickness. I have been impressed with the lack of uniformity in the opinions and ideas of the local surgeons in regard to all subjects, *e. g.*, traumatic hernia; what constitutes a sickness as distinguished from an accident; what sickness is due to the work and what is not. It seems to me of primary importance that we should crystalize our own ideas along these lines and meetings like this give the best opportunity to do that through open discussion and argument. As you may know, all the states in the Union, except North and South Carolina, Georgia, Florida, Mississippi and Arkansas, now have workmen's compensation laws. The discussions incident to the framing of these laws as well as the application of them has done much to clarify the situation. The general trend of these laws is that all physical incapacity among the employees of any concern are properly included in the operating expense where it can be shown that the disability is due to the work and not such as all citizens are equally exposed to. For example a sunstroke is a thing to which all citizens in the same community are liable; but in some occupations, especially where the man has to work in excessively hot places, the occupation renders him more liable to the accident. It is clearly a matter for an impartial body to decide whether in a particular case the man was working under conditions which made him more liable to sunstroke than the average citizen in the same community.

I have now two cases of engineers who are disabled from lame backs attributed to the constant jar of the engine. Should they be classed as accidents or as occupational diseases? The ruling of most of the state compensation laws is that an accident or personal injury is a sudden, unexpected event; this, however, is the result of the cumulative

action of a process prolonged over years but definitely due to the particular work the man has been doing. It seems to me that it would be properly classed as an occupational disease. There is nowhere such a lack of uniformity in the opinions expressed by my local surgeons as in regard to so-called traumatic hernia.

Insomuch as there are to be two papers on that subject today, I will not go into it further than to say that the general trend of the state commissions seems to be that it is practically never that a strain produces a hernia unless there was a pre-existing congenital sac; that the hernia is simply an aggravation of that pre-existing condition. On the other hand, the man may be perfectly honest in saying that as far as he knew he was entirely sound prior to the strain; that the company's examiner passed him as sound when he entered the service and that as a result of the strain he is not able to earn the same money as he was formerly. The general ruling is that such a man is entitled to have the hernia operated at the expense of the company and to be paid for the time lost for the operation. If the man refuses the operation he forfeits all claim (the company being obliged to furnish a surgeon approved by the state commission as competent). If he should die as a result of the operation he is entitled to compensation for an accidental death. If he fails to be cured by the operation an adjustment is made. This seems to me to be as fair a ruling as possible in these much-discussed cases. It has the advantage, also, of getting the hernias operated and not leaving the men partially incapacitated.

One word more about malingering; there is nothing harder for the company surgeon to handle than these cases where he is convinced that the man is not disabled in spite of his statement to the contrary. My own idea and practice as a local surgeon has been to first make a very thorough and often-repeated examination; then to consider the man's past record; has he been a faithful, steady worker, or has he been in the habit of getting off for trifling excuses? If still in doubt, I ask him to arrange a consultation with another reputable physician. With me the deciding factor has been more and more the man's past record. Just as we owe it to the man to see to it that he gets a fair deal when he is really deserving, by the same sign we are bound to protect the company from fakirs; in so doing we are helping those who are really hurt.

There is no doubt but what we can do much toward bringing about a better understanding between the management and the men by studying these matters carefully and honestly and especially by coming to some uniformity in our opinions. A company surgeon is like anyone else; it takes years to establish a reputation for absolute honesty, but a surgeon who has established such a reputation is a great asset from all sides. The men and the company both come to accept his word and so save lots of discussion and litigation and consequent hard feeling. "Honesty is always the best policy" applies nowhere more strongly than here. It is to the advantage of the company as well as to the man and then it redounds to the credit of the profession which we all love and honor.

OPERATIONS FOR THE RADICAL CURE OF INGUINAL HERNIA.*

FREDERICK J. WAAS, M. D.,
Jacksonville, Fla.

The operation which has served me best bears no surgeon's name. It is a simple and natural procedure for the radical cure of inguinal hernia and embraces no extraordinary features. Its object is to restore the parts to their normal relations and at the same time give some additional strength with the view of preventing recurrence.

Exposure of the Canal: A straight incision is made about three-fourths of an inch internal to Poupart's ligament. It begins internal

*Read before the Second Annual Meeting of The Florida Railway Surgeons' Association, at Pensacola, May 9, 1921.

to the anterior-superior spine of the ileum and passes downward and inward parallel with the ligament for a distance of 9 or 10 cm., ending over the external opening of the canal. The skin and superficial fascia are dissected back exposing an area of the aponeurosis of the external oblique at least 4 cm. in width. The aponeurosis is then split in the direction of the fibres from the external ring upward and outward nearly to the upper end of the skin incision. The split is parallel with Poupart's ligament and about 2.5 cm. above it. This is done upon a grooved director, or with a probe-pointed knife or scissors. Only the aponeurosis should be divided, care being taken not to injure the ilioinguinal nerve. The edges of the aponeurosis are then caught by clamps and lifted forward, while the aponeurosis is freed from the underlying muscle outward until the inner side of Poupart's ligament is well exposed and inward as far as the rectus muscle. The opening in the aponeurosis is then held apart with retractors and the cord and sac are picked up between the fingers. One finger penetrates the connective tissue behind the cord and lifted forward. The muscular fibre lying in front of the cord are bluntly pressed upward and the whitish dense structure of the sac exposed. The sac lying in front of the cord is grasped with a pair of forceps.

Treatment of the Sac: In acquired hernia the sac is then dissected free from the rest of the cord by means of a blunt instrument or the finger. A blunt retractor is inserted at the external ring and traction made outward and upward. An assistant draws the cord downward while the sac is being dissected free. The separation of the sac is carried on until the place is reached where it begins to widen out into the general peritoneum. Another clamp is then applied and the sac is opened and split upward on its anterior surface. The interior of the sac is examined to see that no viscera are adherent to it. A curved needle threaded with chromic catgut then catches the sac well up towards the general peritoneum, the ligature is thrown around the base of the sac and tied. While this ligature is being tied, the sac should be pulled well down and its interior exposed, so that it may be seen that no omentum or bowel is embraced by the ligature. The sac is then cut away leaving enough stump to prevent slipping of the ligature.

Closure of the Canal and Ring: The cord is then dropped into its natural bed. The skin and superficial fascia are retracted and the lower edge of the aponeurosis lifted up. A curved needle carrying chromic catgut or kangaroo tendon is then passed from below upward through the lower part of Poupart's ligament. The needle is carried in front of the cord and thence forward, through the conjoined tendon muscle and fascia, lying to the inner and upper side of the external ring. This suture through the conjoined structures should be guided by the finger, it should not penetrate the peritoneum. It should embrace the transversalis fascia, the conjoined tendon of the transversalis and internal oblique muscles and the aponeurosis of the external oblique. It is then carried back across the front of the cord, passed through Poupart's ligament again a short distance anterior to the beginning suture, and as the edge of the outer lip of fascia is lifted up, the two ends are tied on the outer side of the ligament. This is the most important suture in the operation. It should be placed sufficiently low to leave an opening only large enough for the passage of the cord. The danger of making the opening so small that the cord will be unduly compressed is not great. The succeeding sutures pass through Poupart's ligament from below, cross in front of the cord, penetrate the muscular and aponeurotic mass forming the inner wall of the canal, thence pass back through Poupart's ligament to be tied on the outer side of the latter.

Two important points should be observed: (1) All loose and excessive areolar connective tissue should be removed from the cord and canal so that it will not intervene between the sutured surfaces; and (2) the suture passed through the inner wall of the canal should embrace a good thick mass of muscle and aponeurosis.

While these sutures are being inserted the lower edge of the aponeurosis continuous with Poupart's ligament should be held forward by an assistant who holds it in such a way as to cooperate with the surgeon in the passing of the needle. The surgeon's left index finger is held behind the conjoined tendon, the transversalis and internal oblique muscle to guide the needle. When they have been applied, the cord lies at the bottom of the canal and the conjoined tendon and muscles constituting the internal and wall of the canal which have been united to Poupart's ligament.

If the oblique muscle is weak and thin, the rectus may be used in connection with it. The sheath of the rectus is opened on its outer border for a distance of 8 cm. After suturing the oblique muscle under the shelving reflection of Poupart's ligament the same thing is done with the outer border of the rectus, superimposing it upon the oblique.

Overlapping the Aponeurosis: The next step in the operation consists in closing and at the same time shortening the aponeurosis. This is done by placing the lower leaf in front of the upper one. With the same size of needle and catgut as already used, the needle is passed through Poupart's ligament close to the first suture that was passed, and like it from below upward. Thence the needle is carried in front of the closed ring and pierces from below upward and inward the front of the aponeurosis and conjoined tendon on the upper and inner side of the ring. This suture should include a good big grasp of the fascia. It should be placed on the anterior surface of the conjoined tendon so as to cause the lower end of Poupart's ligament to ride over the tendon near the first knot. From this point a continuous running lockstitch suture is applied, drawing the lower leaf of the aponeurosis of the external oblique connected with the inner side of Poupart's ligament up over the aponeurosis of the external oblique internal to the opening. Now this simply causes the lower lip of the aponeurosis to overlap and lie in front of the upper lip. In taking this suture, the needle is passed some distance from the free border of the upper lip. It fixes the free edge of the aponeurosis, which passes from the inner side of Poupart's ligament to the flat anterior surface of the aponeurosis of the abdomen with enough tension to give an overlapping of 2.5 to 4 cm. at its middle.

Closure of the Superficial Parts: The skin wound is closed with a subcuticular suture of linen or silver wire, or by a running through and through suture of fine catgut or silk. Personally, I prefer silk-worm gut. If there is much subcutaneous fat, a running catgut suture may be used to close the deep layer of the superficial fascia before the skin suture is applied. Or in a fat abdomen deep silk-worm gut may be used with superficial stitches of silk between. A firm spica bandage or a pelvic binder with a perineal strip should hold the dressing in place. The scrotum should be supported by a suspensory.

Amplification: There are three important steps in this operation. (1) Isolation and closure of the sac. (2) Closure of the inguinal canal and (3) shortening and closure of the aponeurosis of the external oblique.

In the isolation and enclosure of the sac, blunt dissection usually frees the sac from the rest of the cord and in most cases ligation of its neck is the best method of closure. If the sac is congenital, some cutting with scissors is required; by carefully identifying the cord, there is little danger of injuring it, and at the lower end of the sac it should be cut off in such a way as to leave a tunic for the testicle which should be closed by suture. If the sac is wide at its neck it is better to catch it with clamps at its upper end, cut it away and sew the peritoneal opening just as is done in operative wounds through the anterior abdominal wall. A small sponge on a holder or a narrow spatula may be used to keep the bowels pressed away while the suture is being applied. Where the sac is tied off in order to bring the paritoneal infundibulum above the weak place, the suture may be left long, the two ends each threaded on a needle and passed up the canal and

thence forward and through the muscle of the abdominal wall and tied, this drawing upward the stump of the sac and placing the funnel-like dimple behind strong muscular wall rather than opposite a path of weakness. The internal oblique muscle as it arches over the external ring should not be cut, it can be retracted enough to allow of isolation of the sac.

In this dissection the iliohypogastric nerve should be spared; it lies between the twelfth dorsal and the ilioinguinal as they pass downward and inward from the side of the lower abdomen. They all communicate with one another. They supply motor fibres to the transversalis internal and external oblique and rectus muscles and have to do with the nutrition of the groin and iliopubic region. As the aponeurosis of the external oblique is split and retracted so that the muscle is uncovered, the iliohypogastric nerve will be seen passing across the field of operation lying on the muscle. It enters the aponeurosis of the external oblique about one inch above the internal ring.

In the closure of the inguinal canal in large and sliding hernias, care should be taken not to injure the bladder. A good closure of the lower part cannot be effected unless the cord is freed of all superfluous tissue. In old hernias and in irreducible hernias, there may be considerable of this. Everything should be dissected away leaving only the vas defernes, the artery, essential veins and nerve. It is unwise to attempt to close the canal over a cord which is unduly bulky.

The shortening and closure of the aponeurosis need not be done by the overlapping method, if there is a demand for haste in completing the operation. There is a still more rapid method. It consists in a simple running suture of chromic catgut taken so far from the edge of the fascia in the inner column as to shorten the fascia and close the canal. Whatever method is pursued, before laying one surface of fascia upon another they should be well cleared of connected tissue so that nothing shall intervene to prevent solid coalescence of the two layers.

ACCIDENT HERNIA, FROM THE STANDPOINT OF LIABILITY.*

L. S. Oppenheimer, M. D.,
Tampa, Fla.

There is such a non-compromising diversity of opinion among physicians regarding the liability of the company in cases of sudden hernia following certain accidents, that I feel urged to express my own views very positively on the subject, hoping to bring out a liberal discussion from the surgeons of this association.

It is now pretty generally conceded that rarely if ever does traumatic hernia occur in a person whose inguinal canal is normal, that there is either a congenital or acquired defect; a preformed sac, an enlarged ring, weakened muscles from age or disease, or other predisposing cause.

Industrial accidents, such as straining, heavy lifting, or a fall, or any sudden increase of intra-abdominal pressure are entirely too frequently regarded as exciting causes, when such conclusions are not borne out by the facts. In my opinion, a person coming under this head is not justly entitled to any indemnity for his hernia. The company has not traumatised any of his tissues, has not injured him. The force that is exerted in pressing the gut through the canal in such cases is very rarely more than the person exerts in constipated defecation, occasionally it may be greater.

Most authorities concede at least that when proof shows predisposition, congenital or acquired, that indemnity should be lessened accordingly. Much imposition is practiced on the surgeon in these cases, the party concealing any knowledge of a previous abnormality, prevaricates. But granted that the person was entirely ignorant of any defect, it is, nevertheless, well known now that such defect pre-existed, and that actual traumatic hernia is so rare that comparatively few physicians ever see it. I never have,

*Read by title before the Second Annual Meeting of The Florida Railway Surgeons' Association, at Pensacola, May 9, 1921.

although I have been surgeon for most of the public utilities of my town for over twenty years. But I have seen, as has each of you, very many applicants for indemnity for this class of rupture. I have for many years been of the opinion that the defendant company was not liable, except in such rare instances as showed that an unusual force was applied and on account of positive negligence.

I do not think it absolutely necessary to cite cases to illustrate my point, but for the sake of clarity and emphasis I will mention the last one coming under my observation.

Last month a carpenter, aged 62, fell from the lower step of a slowly moving street car. He struck on his right hip. He paid no attention to the slight contusion. Two days afterward he felt a slight burning sensation in the right groin, and on the day after noticed a protrusion. On the fifth day he went to the claim agent of the company and reported his condition. He was sent to my office for examination. I found a large knuckle of gut projecting through a very large, soft, very patent, non-sensitive ring which easily admitted the index finger. He insisted that he had never had a hernia before.

His age and the physical condition of the canal made it very evident that the defect was pre-existent, and that the force that had been exerted to make the bowel protrude was too slight to render the defendant company liable. To avoid litigation, however, he was given two hundred dollars.

The hernia must be of recent origin, must appear suddenly, must be accompanied by pain and must appear immediately after an accident. The party must be examined at once, or within forty-eight hours, by a physician, to prove a recent origin of trauma.

Both physician and laity should be educated to this idea, because juries render judgments against defendant companies in these cases without exception.

REVIEWS FROM CURRENT LITERATURE

PLYORIC STENOSIS.

Sauer, L. N.: Pyloric Stenosis, American Journal Diseases of Children, Aug. 1921, Vol. 22.

The author believes that a diagnosis of pyloric stenosis is by no means synonymous with indication for surgical intervention. That in most cases a reasonable time should be devoted to dietetic treatment before operation is considered, provided the infant does not lose weight too rapidly. The presence of a palpable tumor or the size of the peristaltic waves have no bearing in making a decision.

The author reports thirty-five cases in which dietetic treatment was effective in twenty-eight. The remaining seven cases received operative treatment with fine recoveries. The author thinks but little of the Roentgen ray as an aid to diagnosis or as furnishing an indication for surgical intervention. The treatment employed was the use of thick gruels made of rice flour or farina. One part of the cereal to seven parts of fluid boiled for an hour makes a gruel of proper consistency. The fluid is by preference an equal mixture of breast milk and water. The gruel must be so thick as to adhere to an inverted spoon. The gruel is given in quantities of one to three ounces seven times a day, fed either by placing a small quantity on a tongue depressor carried far back into mouth or through a hygeia nipple, the end of which has been cut off.

The author makes no claim for this as a panacea for pyloric stenosis, but commends it for a trial before resorting to operation.

RICKETS.

Hess, Alfred F., and Unger, Lester J.: An Interpretation of the Seasonal Variation of Rickets, American Journal Diseases of Children, Aug. 1921, Vol. 22.

Rickets comes into sudden prominence in the winter and early spring and decreases during the summer months. In the experience of the authors rickets was found to occur with every food without exception. It was deemed probable then that diet is not

the chief causative factor in the production of rickets, but that the absence of the rays of sun played an important role.

Six cases of rickets are reported. These children were on various diets and for two months were given ultraviolet ray therapy three times a week without change in diet. In all cases the rickets showed definite improvement as evidenced by Roentgen ray examination. Haemoglobin and red cells increased in every instance. In place of ultraviolet ray sunlight, when available, will insure equally good results both in the prevention and cure of rickets. This explains why rickets preponderates in the large cities where infants are closely housed during the winter. The conclusion of the authors is that hygienic factors, especially sunlight, and not dietetic factors, play the dominant role in the marked seasonal variation of rickets.

VISUAL FATIGUE.

Jackson, Edward: Visual Fatigue, American Journal of Ophthalmology, Vol. 3, p. 119, February, 1920.

After discussing the cause of general fatigue and weariness, he goes on to point out that visual fatigue may contribute to general fatigue and weariness.

The junction of the nerves and muscles is especially likely to give out under continued stimulation, and thus produce fatigue.

Over-use of the extrinsic muscles of the eye may cause soreness and fatigue.

Perhaps the most common symptoms of fatigue are dryness, roughness, burning, smarting and a feeling of sand in the eyes.

Fatigue of the retina and nerve centers is the most important of all causes of visual fatigue. This is first shown by lessened visual acuity.

Visual fatigue due to weakness of coordination is frequently found.

Coordination is an extremely complex function, and is, perhaps, the most frequent cause of visual fatigue.

This is especially liable when there is the slightest paresis or weakness of one of the ocular muscles. In such cases symptoms of fatigue come very soon after the use of the eyes, and causes headache, vertigo, diplopia, etc., and soon forces the patient to seek relief.

It is obvious that the particular type of ocular fatigue should be diagnosed, if possible, so that appropriate remedies may be used.

ASCARIS LARVÆ.

Randall, B. H., and Cram, E. B.: The Course of Migration of Ascaris Larvæ, The American Journal of Tropical Medicine, Vol. 1, No. 3, pp. 129, 160, 1921.

The writers reviewed previous work by others showing that when eggs of Ascaris lumbricoides were swallowed, the larvæ on leaving the eggs did not immediately settle in the intestine but passed on to the liver, then to the lungs and back to the intestine. During the journey which takes about ten days they undergo developmental changes.

The conclusions from previous work was that the migration was in a great measure by burrowing.

This paper based on experiments on about 100 animals, mostly guinea pigs, shows very conclusively that the blood stream plays at least a major part in the migration.

Infection was accomplished by causing the animals to swallow larger quantities of incubated ova.

Larvæ were found in the portal vein, liver, vena cava, right side of heart, lungs, messenteric lymph nodes, abdominal cavity, plural cavity, peripheral lymph nodes.

In this series the spleen, kidneys, pancreas and alimentary tract were not examined.

EXPERIENCES WITH SODIUM ARSPHENAMINE.

Michelson, Henry E., and Siperstein, Davis M.: Experiences With Sodium Arsphenamine, Archives of Dermatology and Syphilology, Vol. No. 2, p. 184, 1921.

In this article the writers give the literature that has recently appeared on the subject of sodium arsphenamine, and as well, their experience with the use of this preparation (diarsenol). 545 injections were given to 66 patients, the treatments were administered with a Luer syringe of 10 cc. capacity, freshly distilled water used, the injections were given intravenously.

The conclusions given by the writers are as follows:

1. Sodium arsphenamine is a readily soluble, easily administered and safe preparation.

2. Sodium arsphenamine exerts a marked influence on clinical manifestations of syphilis.

3. We believe that courses of sodium arsphenamine should be supplemented with mercury.

4. The therapeutic efficiency is apparently equal to that of other arsphenamines (clinically).

5. The effect on the Wassermann reaction is about on a par with that of other arsphenamines.

BRONCHIECTASIS AND LUNG ABSCESS.

Lynah, Henry L., and Stewart, William H.: "Roentgenographic Studies of Bronchiectasis and Lung Abscess After Direct Injection of Bismuth Mixture Through the Bronchoscope." (*The American Journal of Roentgenology*, Vol. VIII, No. 2, p. 49, February, 1921.)

Isolated instances of passage of barium or bismuth meals into the lung through a fistula have been variously observed. The authors, however, have made a practical application of the fact that there seems to be no harm done the patient. They summarize as follows:

"1. Bismuth mixtures can be injected into the bronchi and lungs of a living patient without danger.

"2. The injection of an opaque substance into the lung of a living patient will open an enormous field of usefulness in the study of cough, the expulsion of substances from the lung, and lung drainage. It will also aid in localizing bronchial strictures in the same manner as in the esophagus. Furthermore, it will be of greatest aid to the thoracic surgeon by mapping out the abscess cavity in the respective lobe of the lung.

"3. A definite lung abscess cavity is seldom seen bronchoscopically. Pus is usually seen coming from a branch bronchus, although the abscess may be well around the corner, and not in that portion of the lung from which the pus is oozing. An injection of bismuth mixture or some other opaque mixture will 'clear up' this error.

"4. Bismuth, when it enters the abscess cavity, is recognized by its metallic luster, whereas when it is in the lobular lung structure, it is discerned as a dull opaque area. Pus diffuses and soaks the lobular structure in a manner similar to bismuth; this often makes the involved area appear many times larger than it really is.

"5. The bismuth mixture injected in these patients was 8 c.c. of bismuth subcarbonate in pure olive oil (1-2). The mixture is rendered sterile by boiling before injection.

"6. The injection should be made slowly and not with a 'squirt,' or else the rœntgenographic observations may be spoiled by bismuth soaking the lung structure surrounding the diseased area.

"7. It seems from these preliminary studies that cough and action of cilia are not the only means of expelling secretions.

"8. While bismuth mixtures were originally injected for the purpose of lung mapping in cases of lung abscess cavities, they seem to have been of therapeutic benefit to the five patients upon whom they were tried. So far the procedure has done no harm.

"9. While the fluoroscopic examination is important, stero-rœntgenographic examination is the best means of localizing the cavitations.

"10. Experience has shown that the rœntgen examination should be made almost immediately after the removal of the bronchoscope, otherwise the patient, in a fit of coughing, will remove much of the bismuth from the involved lung."

ROENTGENTHERAPY IN MALIGNANT DISEASES.

Pfahler, George E.: "Clinical Results from the Newer Technique of Deep Rœntgentherapy in Malignant Diseases." (*The American Journal of Roentgenology*, Vol. VIII, No. 5, p. 236, May, 1921.)

Dr. Pfahler has carefully adapted the technique used in Germany to conditions as we find them in this country. He finds that a half millimeter of copper is equal to 13 millimeters of aluminum. His technique now.

using the high voltage of 126,000 volts, 5 milliamperes of current filtered through 10 millimeters of aluminum or glass at a skin focal distance of 30 c. m., with a running time of 40 to 50 minutes, will produce an erythema dose.

"I believe the technique above described to be a definite advance. It will probably be further modified and further developed, but so far it is adaptable to our present outfits, and if used with great caution greater beneficial results can be obtained. I think we may draw the following conclusions at present:

"1. Increased filtration, with increased focal skin distance, will increase the value of deep radiation as compared to the surface effect.

"2. By increasing the above two factors the time of radiation is greatly increased—probably fivefold. This prolonged radiation in itself may be an important factor in preventing cell division and regeneration of the cancer cells.

"3. Radiation sickness is increased, and extra effort must be made to overcome this effect.

"4. The greatest caution must be observed in keeping the filters in place and at their full prescribed quantity.

"5. Increased protection is necessary for both patient and operator.

"6. The clinical results obtained from this new deeper technique excel those obtained formerly."

CASE RECORDS.*

(ANTE-MORTEM AND POST-MORTEM) AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES AT THE MASSACHUSETTS GENERAL HOSPITAL

EDITED FOR THE USE OF PRACTITIONERS BY

RICHARD C. CABOT, M. D., AND HUGH CABOT, M. D.

F. M. PAINTER, ASSISTANT EDITOR

CASE 6482.

CHRONIC ABDOMINAL PAIN SERIES, NO. I.

First Entry. German bottler of fifty-seven entered October 15, 1909, eight years before his final admission.

F. H. His mother died of "lung trouble," one brother of hemorrhage from the lungs (?).

P. H. He had malaria twenty years ago. He denied venereal disease.

Habits. Good. His bowels were constipated.

P. I. Six years ago he began to have pain in the epigastrium, never severe, after any very hearty meal. Two years ago he was suddenly seized with violent abdominal pain, and vomited a large amount of blood. He was laid up for three months. After this he was fairly well, though he found that hearty food was apt to cause pain. In December, 1908, he had another severe attack. He was in a hospital two months, and was unable to work for a month more. The morning of admission, after a week of increasing discomfort in the epigastrium he was suddenly seized with severe pain and vomited a large amount of blood.

P. E. Entirely normal.

T. and *R.* normal during a stay of three weeks. *P.* 98 at entrance, after October 18 normal. Normal amount of *urine*. Sp. gr. 1020-1021. The slightest possible trace of albumin and many leucocytes at one of two examinations. *Blood.* Hgb. 85%. Smear normal. Stools black with guaiac positive at the first three of seven examinations.

The patient was starved for three days, then given a diet of crackers and milk. He was perfectly comfortable and gained weight. November 5 he was discharged much relieved.

Second entry. December 1, 1911, he returned. Since leaving the hospital he had been on a careful diet and had kept perfectly well and strong. During the past two weeks he had taken various things not on his diet list. Seven days ago he felt the abdominal wall growing tense, and had considerable distress and pain after eating. He did not, however, take any precautions. Three days ago he was awakened from sleep at midnight and passed four quarts of blood by rectum. He felt much relieved immediately afterwards. Since then he had kept in bed, extremely weak, but in no discomfort, and eating nothing but milk.

P. E. Extremely pale, breathing hurriedly and making restless motions, complaining of light-headedness, and talking at random. A blowing systolic murmur over the precordia. Complete physical examination not made until December 30, then negative except for pallor.

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T. and *R.* not remarkable. *P.* at entrance 100, normal by December 8 and afterward except for one rise to 94 December 20. *Urine* not remarkable. *Blood.* Hgb. 40% at entrance, rose to 60% December 22 and later. Leucocytes 15,000 at entrance, normal after December 6. Polynuclears 75%. Six megaloblasts. Reds 2,100,000 rising to 3,600,000. Smear at entrance and December 6 showed achromia, variations in size and shape, polychromatophilia and stippling.

The patient was given nothing by mouth for five days. The stools continued to show positive guaiac for eighteen days. He made steady improvement after the first week and was discharged relieved January 3.

Third entry. March 20, 1917, he reentered. Since leaving the hospital he had been free from gastro-intestinal symptoms for two years. At the end of that time he began to have severe burning and boring pain in the pit of the stomach, coming on usually an hour or two after meals, relieved by belching gas or taking sweet oil, milk, soda or food, or by vomiting. When not relieved the pain would continue from two to four hours or more. The attacks often followed indiscretions in diet. He was sometimes free for months. During the five years he had had two or three attacks of vomiting of coffee grounds, usually about a quart, containing food particles, usually coming one or two hours after eating, and followed for two or three days by the passage of dark stools. He always felt faint during and after these attacks, remained in bed two or three days, and was careful of his diet. For four years his appetite had been poor and his bowels constipated, sometimes going four days without a movement.

For six months he had had some urgency, and frequency $\frac{D\ 6\text{-}8}{N\ 4\text{-}6}$. His best weight was 176 pounds, his usual weight 165, his present weight 164.

He now admitted formerly drinking 6 to 12 glasses of beer and two or three of light wine a day. For a year he had taken only one or two glasses of beer a week.

Three months ago, shortly after luncheon, he felt faint, dizzy and nauseated, and vomited "a gallon of black, bloody coffee ground" vomitus with some food. For two or three days the stools were black. He remained in bed and ate no solid food for four days. At the end of two weeks, remaining in bed all the while, he had another attack in which he vomited a quart of coffee ground material. He remained in bed for four days longer. He had continued to have the same sort of boring, burning pain in the pit of the stomach at irregular intervals with weeks of freedom, relieved in the same manner as stated above, sometimes associated with vomiting, at others with pain sometimes severe enough to double him up, sometimes lasting only a few minutes, at others an hour or more. Since the last vomiting of blood he had been well except for attacks of epigastric pain. Twelve days ago, half an hour after eating six spoonfuls of white cheese, he was seized with violent colicky general abdominal pain which doubled him up. Ten minutes after the onset he vomited. Only morphia gave relief. He took a cathartic and an enema and felt well, though he remained in bed on a light diet. The night before admission he had some burning and boring pain in the epigastrium almost immediately after eating, and vomited all his supper.

P. E. Fairly well nourished. Breath foul. Tongue showed a thick brown coat. Lungs hyperresonant, obscuring the cardiac dullness. Emphysema. Slight systolic murmur at apex of *heart.* Artery walls palpable. Brachials tortuous. *Abdomen, genitals, extremities, pupils* and *reflexes* normal. *Rectal* examination showed a large prostate, not tender.

Before operation *chart* normal except for T. 108.8°-102.3° and P. 112-116 April 2 and 3, and T. 100.1° April 9. *Urine.* Normal amount. Sp. gr. 1016-1022. Cloudy at all of five examinations, alkaline at two, slightest possible trace of albumin at four. Pus at six examinations, including a catheter specimen, culture from which showed a profuse growth of colon-like and other bacilli. *Renal func-*

tion 30%, 10% and 45%. *Blood.* Hgb. 80% Leucocytes, 8,400 and 6,700. Polynuclears 80-87%. *Wassermann* negative. *Vomitus.* Guaiac faintly positive. Free HCl present. *Gastric analysis.* Fractional extraction by Rehfuss tube. Free HCl .069-.164. Total acid .165-.294.

The patient had several attacks of severe pain, usually relieved by soda, the night of March 31 requiring morphia gr. 1/6. April 2 he was catheterized. That night he awoke at midnight with sudden onset of severe pain, most marked in the region of both kidneys, but felt also in the epigastrium like "gall-stones." Because of abdominal distension an enema was given, with fair result. This was soon followed by a chill with a temperature of 102°. Next morning the temperature was 102° and the pulse 100. The heart and lungs were negative. The abdomen was everywhere soft. There was some tenderness of the epigastrium, and considerable costovertebral tenderness. The white count was 30,000, 87% polynuclears. A surgical consultant thought the condition probably renal. A urologist advised study of the genito-urinary tract. X-ray showed no definite evidence of gall-stones or kidney stones. Spine showed distinct hypertrophic changes. Stomach low. Peristalsis irregular and at times vigorous, rather atonic. Sphincter not definitely irregular. Cap never filled regularly, and was displaced behind the antrum, making it very difficult to observe. Questionable tenderness in that region. The genito-urinary consultant found considerable enlargement of the prostate, and a residual of 5 6. He thought that though the kidneys were undoubtedly damaged the question of operation should be decided by the urgency of the gastric condition. Two surgical consultants advised operation, one advising postponement for one or two weeks to get away from the kidney upset.

April 12 operation was done. The patient made an uneventful recovery until April 28. Then he had a chill and shot a temperature of 104.4°. He was discovered to have a cystitis and was put on urinary antiseptics, (urotropin gr. x t. i. d. and acid sodium phosphate gr. x t. i. d.) He did not gain well until he was put out in the fresh air every day. May 10 he was discharged relieved.

Note.—This case is the first of a series of cases illustrating some of the types of chronic abdominal pain discussed by Dr. Smith in the accompanying study. Others will appear from time to time, with comment by Dr. Smith.

Case 6482

Chronic Abdominal Pain Series, No. I.

DISCUSSION.

By Dr. William H. Smith.

This case represents a clean-cut, definite, undoubted condition. At forty-three pain in the epigastrium, later hematemasis. There is no statement of the so-called discomfort when the stomach is empty (i.e., hunger pain) which is so frequently present in ulcer cases. The freedom from pain over long periods is again characteristic of certain ulcer cases. The age of the patient, the localization of the pain in one area, the hematemasis, the periodicity of the discomfort all make the diagnosis of ulcer clear.

The recurring attacks of vomiting of blood are of interest. One must not forget where chronic indigestion appears in the patient of the ulcer age that hemorrhage may be into the intestinal tract and associated with dizziness, palpitation or faintness.

Questioning about the presence or absence of a black stool will often give conclusive evidence of hemorrhage or duodenal ulcer. Rarely where the hemorrhage is very large bright blood may be passed by rectum.

The maintenance of weight during this series of years is of interest. His history illustrates strikingly the effect upon many of his symptons of an irregular diet or the overfilling of the stomach. The ordinary ulcer case is more comfortable with frequent small amounts of food than with excessive liquid or bulky rough food.

At his last entrance the X-ray observation gave a characteristic picture of duodenal ulcer. The stomach analysis was consistent.

Apparently there was no stasis, a faintly positive guaiac, and acidity at least not suggesting the hypoacidity associated with carcinoma.

Referred pain in the abdomen is occasionally found in cases of the hypertrophic arthritis of the spine which the X-ray shows to be present in this case. The symptomatology, however, is absolutely different when such referred pain from arthritic changes exists.

The temperature at his last entrance was probably associated with a prostatic block and a mild grade of infection of the bladder, possibly of the pelvis and the kidneys.

Before any patient is transferred for operation from the medical service it is my custom to survey the entire problem. This survey may be called the pre-operative risk. Angina pectoris, for example, is a pre-operative risk; likewise lowered renal function, myocardial insufficiency, bronchi-ectatic cavities, and acute nasopharyngitis.

Operation upon patients with duodenal ulcer is advised when stasis exists; in the presence of recurring hemorrhage; and when the condition of the patient renders it impossible for him to regulate his diet or his life comfortably. Perforation of the duodenal ulcer is of course a surgical condition.

Operation

A white scar the size of a twenty-five cent piece was found on the posterior abdominal wall of the first portion of the duodenum, showing old ulcer. This area was infolded. Posterior gastro-enterostomy was done.

Diagnosis

Duodenal ulcer.

Outcome

In October, 1920, the patient reports that while he still has occasional pain, it is not severe, comes only in cold weather, and never confines him to bed. He never vomits now. He considers himself cured.

PROPAGANDA FOR REFORM

Diabetic Foods.—A report from the Connecticut Agricultural Experiment Station on diabetic foods includes not only the content of carbohydrate in these products but also that of protein and fat in view of the recognized necessity of taking into account all of the nutrients in any proper formulation of regimen for the diabetic patient. There is no satisfactory definition of what a diabetic food is, nor is there any universal diabetic food. The value of accurate information regarding the makeup of such products as may find special application in the dietotherapy, such as given in the Connecticut report, lies in the fact that it enables clinicians and the patient to proceed intelligently in the direction of diet planning with a view to tolerance of all the nutrients. Of particular interest in the report are the analyses of bran, which is being widely used at present to give bulk to the food residues in the alimentary canal. It appears that common, unwashed bran frequently contains no more than half as much starch as some of the advertised brands of "health" bran. (*Jour. A. M. A.*, September 18, 1920, p. 818.)

The Bethlehem Laboratories, Inc., Preferred Stock. — Physicians in various parts of the country have received advice that they have been selected to share in the profits of the Bethlehem Laboratories, Inc., New York City. The company claims to control the manufacturing of hyclorite, a product accepted by the Council on Pharmacy and Chemistry. These physicians are given an option to purchase four shares of the company's stock for four hundred dollars. The directorate of the Bethlehem Laboratories, Inc., is stated to be composed of business men of Bethlehem, Pa., the president of the General Laboratories, Madison, Wis., a "prominent physician" of Bethlehem, and J. Jay Reilly, Philadelphia, a "prominent Philadelphia surgeon and consulting chemist to several large manufacturing drug concerns." Hyclorite, manufactured by the General Laboratories, Madison, Wis., was accepted by the Council on Pharmacy and Chemistry for inclusion in New and Nonofficial Remedies because, at the time that it was considered, it was marketed in accordance with the Council's rules. The investment proposition which the Bethlehem

Laboratories makes to physicians is an insult to decent medical men. When physicians are interested in products they prescribe or recommend, the public does not get a square deal. It is against public interest and a degradation of scientific medicine for physicians to be financially interested in the products they prescribe. (*Jour. A. M. A.*, August 14, 1920, p. 493.)

The Bethlehem Laboratories Explain. —The president of the General Laboratories, who is also vice-president of the Bethlehem Laboratories, explains that the Bethlehem Laboratories is the sales and distribution organization for hyclorite, which is manufactured by the General Laboratories, and that the offer from the Bethlehem Laboratories to sell to physicians shares in the company was the unauthorized act of an authorized agent. The General Laboratories and the Bethlehem Laboratories recognize the impropriety of soliciting physicians to purchase stock in their concern. (*Jour. A. M. A.*, Oct. 9, 1920, page 1016.)

Value of Schick Test.—The Schick test, which can readily be applied to a large number of persons, makes it possible to differentiate those immune from those susceptible to diphtheria. It also facilitates the attempt to increase the number of the immune by suitable prophylactic toxin-antitoxin injections. By the use of the Schick test and toxin-antitoxin injections, institutions have been kept free from cases of diphtheria for years. (*Jour. A. M. A.*, August 21, 1920, p. 545.)

Chaulmoogra Oil in Leprosy.—The results obtained with the treatment of lepers at the leprosy investigation station in Kalihi, Hawaii, with the ethyl esters from chaulmoogra oil have been encouraging. It will require, however, some time to determine whether a real cure for leprosy has been discovered. (*Jour. A. M. A.*, July 24, 1920, p. 263.)

More Misbranded Nostrums and Drug Products. — The following products have been the subject of prosecution under the Federal Food and Drugs Act: Beecham's Pills were held misbranded because the curative claims made for them were false and fraudulent, and because the pills were not made in England as claimed. Pike's Liver, Kidney and Stomach Remedy, because the therapeutic claims were false and fraudulent. Ergot Apiol Compound (Evans Drug Co.), because the capsules did not contain the claimed amounts of drug and because they were an imitation. Prescription 1000, sold in two forms, a copaiba preparation for internal use and a dilute potassium permanganate solution for external use, was sold under false and fraudulent therapeutic claims. Rival Herb Tablets were tablets falsely claimed to be chocolate coated and sold under false and fraudulent therapeutic claims. Wilson's Solution Anti-Flu consisted essentially of oil of eucalyptus, methyl salicylate and thymol or oil of thyme, and was falsely claimed to be effective as a remedy for influenza, colds and grippe. Castor Oil Capsules (Evans Drug Co.), did not contain the amount of drug claimed. (*Jour. A. M. A.*, September 4, 1920, p. 690.)

More Misbranded Venereal Nostrums. The following preparations have been the subject of prosecution by the federal authorities under the Food and Drugs Act, chiefly because the therapeutic claims made for them were false and fraudulent. Injection Zip (The Baker-Levy Chemical Co.), consisting essentially of acetates and sulphates of zinc and lead, opium, berberin, plant extractives, alcohol and water. Three Days Cure ("3 Days" Cure Co.), consisting essentially of zinc sulphate, boric acid and water. Redsules (H. Planten and Son), consisting essentially of oil of santal, copaiba and methyl salicylate. Blakes Capsules (Henry K. Wampole and Co.), consisting essentially of a tablet of salol suspended in a mixture of volatile oils, oleoresins and plant extractives, including copaiba and cubebs. Compound Extract of Cubebs with Copaiba (The Tarrant Co.), consisting essentially of cubebs, copaiba and magnesium oxid. Santal Midy Capsules (E. Fougera and Co.), containing essentially of oil of santal. (*Jour. A. M. A.*, Oct. 9, 1920, page 1016.)

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PELLAGRA AND THE SOUTH.

Florida is not especially concerned in what might be called a controversy between certain southern state health officers and the lay press and the federal government, brought about by President Harding issuing a statement relative to the pellagra situation in the south coupled with a warning that a state of famine existed or was threatened in certain sections of the cotton belt.

The rather broad intimation, if not of actual statement, that the entire south, which of course included Florida, was involved in a severe pellagra problem was a very serious mistake and cast for the time being an undeserved reflection on those sections of the south not in any way involved in a threatened pellagra epidemic.

Many believe that the President acted too hastily, editorials have appeared in the lay press intimating that it was a political move intended to hurt the south, the United States Public Health Service has been severely criticised, being accused of gross misrepresentation and exaggeration. The health officials of every state in the south issued statements throughout the press covering the pellagra situation in their respective areas. Early during the present month a conference of state health officials was called by the Surgeon General of the United States Public Health Service. The only details of this conference at hand are those published in the lay press. A survey of these details indicate that the state health officers in the various areas most directly concerned are far from unison in their views concerning the situation, these views naturally being largely governed by local conditions in which these officials function.

The medical profession is not so much concerned with the political aspects of the situation, if indeed there are any, as it is with the criticism of the United States Public Health Service. Concerned as this branch of the federal government is with the public health of the nation, it is hardly conceivable that public health conditions would be grossly misrepresented or exaggerated.

The United States Public Health Service has always represented the highest degree of scientific efficiency in handling public health problems and has at all times held the confidence of the medical profession and the public at large. The work of their personnel, both individually and collectively, have at all times been looked upon as representing high water-mark in public health proficiency. There has always been the closest co-operation between the states and this branch of the public service and at no time has this co-operation been more pronounced than at the present time.

A consideration of the questions at issue are therefore timely. In the first place, after thrashing out the existing conditions and getting at actual facts, there is no reason to believe that any state health officer of the south will hold any opinions concerning pellagra widely divergent from those of the Surgeon General of the Public Health Service.

The etiology of the disease is now generally accepted as at the least being connected with an unbalanced diet low in proteids, the vast majority of observers having discarded all other former theories connected with the etiology of the disease. At the present time economic conditions in at least portions of the cotton belt are such that great numbers of the population are living on diets low in proteids, with a corresponding carbohydrate excess. Such individuals may be literally starving although living in a land of plenty. The word famine as generally used applies to a condition where food does not exist and cannot be obtained, so that our Chief Executive's statement that a condition of famine ("for such it would be called in any other country") exists in any part of the cotton belt is not exactly within the facts, for there is no part of the south where food does not exist in plenty. That certain individuals and in some instances large numbers of the population in the cotton belt are living on a diet conducive to the increase of pellagra will probably not be denied; that economic conditions for some months past has already resulted in an increased pellagra morbidity rate in certain districts will be admitted; and that if present conditions continue a further pellagra morbidity and mortality rate must be anticipated. This we understand is about what the field experts of the Public Health Service reported to Surgeon General Hugh S. Cumming, and these reports were the basis of his report to the President of the United States.

The Journal, therefore, does not believe that Surgeon General Cumming has in any sense reported conditions other than exist and opines that he cannot be justly charged with gross misrepresentation or exaggeration. We believe that the report of Surgeon General Cumming to President Harding was fully justified by existing conditions. As to the interpretation of the report made by the Chief Executive, there seems to have been a tendency to hold and set forth unnecessary alarming views. Co-operation between the United States Public Health Service and the various state health authorities in the affected areas, which will undoubtedly exist, will be sufficient to meet and cope with the situation. It is after all very largely a matter of educational propaganda and while in no measure advocating secretive tactics in public health work of any nature, such a propaganda of education conducted by the federal and state authorities will remedy and finally overcome existing conditions and nothing was to be gained by heralding to the world that a terrible epidemic was imminent and a deplorable famine in existence.

As stated in our opening sentence, Florida is not especially concerned in the controversy, we are not in the cotton belt, no section of the state is a one-crop community, and pellagra has not been a serious public health problem in the state at any time during the past half decade. We are, however, of the south, and anything that throws discredit on the south directly concerns us. Health conditions in Florida are excellent, a failure of the cotton crop at any time does not materially affect the state except as depression in any part of the country may be reflected in a general way in all other sections. While we have no reason, therefore,

to believe that this state would at any time be seriously threatened with a pellagra outbreak, should any small section of the state be threatened the State Board of Health is fully prepared to inaugurate any necessary measures to keep the disease within control.

SPECIAL TRAIN ANNOUNCED ACCOUNT MEETING SOUTHERN MEDICAL ASSOCIATION.

Arrangements have been made by the Medical Association of Georgia to conduct a special train to the fifteenth annual meeting of the Southern Medical Association, which will be held in Hot Springs, Ark., November 14-17, 1921. This train, which will consist of all-steel drawing-room sleeping cars, compartment cars and dining cars, will leave Atlanta, Ga., via the Seaboard Air Line Railway, at 5.30 p. m., Saturday, November 12th, arrive Birmingham at 10.40 p. m., leave Birmingham via Frisco Railroad at 11.00 p. m., arrive Memphis early morning of the 13th, using the Rock Island Railroad from Memphis to Hot Springs, arriving there about 1.00 p. m. of the 13th. This route has been selected as it is the shortest and best route from this territory to Hot Springs, and will afford our members the best possible service. Our special will be personally conducted by Mr. Pat Hampton, District Passenger Agent of the Seaboard, who served overseas with the Emory Unit (Base Hospital No. 43), and who has had extensive experience in conducting parties of this character. Mr. Hampton will remain with the party at Hot Springs to take care of the arrangements for the return trip. Application has been made for special reduced rates for the meeting, and we expect to have advice on this feature at an early date.

All physicians of the Southeastern States, who anticipate attending this meeting, are cordially invited by the Medical Association of Georgia to join them on this trip. Those from Virginia, North and South Carolina and Florida should join the party at Atlanta, at which point the Georgia delegation will concentrate, those from Alabama joining the train at Birmingham.

It is anticipated that this will be one of the largest and best meetings ever held by the Southern Medical Association, a very large attendance being expected from over the entire Southern States.

The officers of the Association cordially invite the physicians to take their wives on this trip, and it is principally to accommodate them that we have arranged for compartment cars to be attached to our special train. All those expecting to make this trip should send their applications for space right away.

For further information, including all details, write Mr. Pat B. Hampton, District Passenger Agent, Seaboard Air Line Railway, Atlanta, Ga., or Dr. Allen H. Bunce, Secretary, Medical Association of Georgia, Healy Building, Atlanta, Ga.

PERSONAL ITEMS AND NEWS NOTES.

The Board of Medical Examiners met in Jacksonville, August 2d and 3d, under the presidency of Dr. James M. Jackson, of Miami. A class of forty-three applicants appeared before the Board. A full report of the examination will be published in an early issue of THE JOURNAL.

Dr. James H. Pittman, of Jacksonville, is in New York taking up a course of postgraduate study in proctology.

Dr. Harold H. Fox, of Miami, is spending the summer at Olean, N. Y.

Dr. William B. Keating, of the State Board of Health, recently returned from Washington where he was in attendance, as a representative from this state, in the pellagra conference called by Surgeon General Hugh S. Cumming, of the United States Public Health Service.

The friends of President S. R. Mallory Kennedy, and they are legion, will be pleased to hear of his promotion in the United States Public Health Service, to the rank of Major. Dr. Kennedy has represented the Public Health Service at Pensacola for many years.

All of western Florida and most of the state are familiar with the excellent work he has carried on at his station.

The Pensacola Journal had the following to say on Major Kennedy's well-deserved promotion:

"The many friends of Dr. Mallory Kennedy will be pleased to learn that he received his commission as major yesterday.

"Dr. Kennedy has been the local representative of the U. S. Public Health Service since 1906, and for a long time had charge of all public health service activities in Pensacola.

"At the outbreak of the plague in June, 1920, Dr. Kennedy was relieved of his duties in charge of the out-patients' relief office and bureau of war-risk patients and was placed in charge of quarantine and shipping, while P. A. Surgeon Fred C. Locke (B) was sent to relieve him of all other duties, in order that he might devote all of his time to the quarantine division.

"The duties of a quarantine officer are to keep diseases from entering a port by the water route, and once it has entered, from spreading to other ports. How well he has performed his duties is shown by the fact that with all the coastwise and foreign shipping out of Pensacola since the outbreak of the plague in June, 1920, no case of plague has developed in any port that had direct communication with Pensacola, and this feat has been accomplished without putting vessels in quarantine, and without any delay to shipping, other than the few hours necessary to perform the effectual cyanide fumigation which destroys all animal life.

"He has been fair and impartial in his dealings with the shipping interests of the city, and no one can charge that he has made fish of one and fowl of another, but all have been required to obey the quarantine regulations. Other state officials have confidence in the local representative of the U. S. Public Health Service and accept without question his clean bills of health and fumigation certificates.

"Having had much experience in the handling of yellow-fever epidemics in Central America and New Orleans, no one knows better than Major Kennedy the disastrous consequences of admitting a case of yellow fever into a community, and that the recognition of a case on board an incoming vessel and the taking of the necessary precautions to prevent the entry of the disease into a port means not only the saving of many lives, but the saving of the community life of the city as well.

"Few people, probably only the ship's crew and the agents knew that in September, 1920, a vessel arrived at this port with a case of yellow fever on board. Major Kennedy boarded this ship as he does all ships entering the harbor, quickly recognized the condition and took the vessel at once to quarantine. There the patient was removed from the ship to the screened ward of the station hospital, and the crew of the ship held under observation during the period of incubation for the disease. Appropriate measures were taken to rid the vessel of mosquitoes, and after all was safe and the patient had recovered the vessel was allowed to come to Pensacola to load. Had Major Kennedy failed to recognize the condition, disaster would have followed.

"The public health service realizes that in Dr. Kennedy they have a live wire, and that he is constantly on the job, and his promotion to the rank of major is a just recognition of the valuable services he has rendered for many years."

Dr. Frederick Bowen, of Jacksonville, recently returned from New York where he spent several weeks of postgraduate observation in the New York hospitals.

Dr. Roy O. Cooley, of West Palm Beach, is spending a few weeks at Weaverville, N. C.

GENERAL HOSPITALS AND T. B. PATIENTS.

The opening of wards in general hospitals for tuberculous patients, as recommended by the American Medical Association at its recent annual meeting in Boston, will, it is

believed by the U. S. Public Health Service, be of enormous benefit not only to most of the two million known victims of the disease in the United States but also to thousands of others in whom the disease is incipient and easily suppressible, if promptly treated. Tuberculosis in this stage is difficult and often impossible of positive diagnosis, even by an expert; and many persons, even when told by their family doctor that their case is "suspicious" and that they should take precautionary treatment, fear the stigma of an avowed tuberculosis hospital and put off action until recovery has become long and difficult. In a general hospital the diagnosis will not be made public and the family will not be embarrassed but at the same time all necessary precautions can be taken to avoid danger of infection to others.

The resolution was prepared and recommended by the National Tuberculosis Association in 1916; its approval now by the American Medical Association shows a very marked change in medical sentiment.

In support of the new policy it is argued that in many small cities two hospitals, one general and one tuberculous, can be run only at a loss, but if combined, would pay operating expenses, especially as the combined hospital would draw many secret tuberculous cases. Many general hospitals could easily enlarge their facilities by fitting up wards, roofs, porches, and unused open-air spaces and thus provide greatly needed space for tuberculous patients, both former Army men and civilians.

The routine treatment of tuberculous patients in all general hospitals, instead of as at present in only about one-eighth of those in the country, should enable people in moderate circumstances to obtain preliminary treatment in their home towns instead of being forced to go without or to go to resorts. Such preliminary treatment would habituate the patient to the regimen essential to his cure and to the protection of others and would enable him to go back to his home and get well under home treatment, as he probably would not have done without such training.

Visits to the hospital will also familiarize members of the patient's family with sanitary precautions such as the sputum cup, which commonly horrifies them and is soon given up by home patients.

Visits by the family physician to his patient in the hospital would familiarize him with the treatment and enable him to diagnose other cases much earlier. It would also enable him to supervise the later home treatment of both this patient and of others. At present, although tuberculosis is the most common of all serious diseases, its treatment is neglected because general practitioners are in the habit of sending their patients away.

In short, the result of opening the general hospitals to tuberculous patients will, it is believed, be very largely preventive and will thus be in line with the medical tendency of the day, which is looking more and more to prevention instead of to cure.

NEW AND NONOFFICIAL REMEDIES.

Guaiacol Benzoate.—Benzosol. — The benzoic acid ester of guaiacol. Guaiacol benzoate is slowly decomposed in the intestinal tract into benzoic acid and guaiacol, which exert their usual action. It is said to be useful in the incipient pulmonary tuberculosis, as an intestinal antiseptic and a urinary antiseptic.

Guaiacol Benzoate-Seydel. —A brand of guaiacol benzoate N. N. R. Seydel Manufacturing Co., Jersey City, N. J. (*Jour. A. M. A.*, June 4, 1921, p. 1575).

Saligenin-Abbott.—A brand of saligenin N. N. R. For a discussion of the actions, uses and dosage of saligenin, see New and Nonofficial Remedies, 1921, p. 35. Abbott Laboratories, Chicago.

Santyl Capsules 7 Drops.—Each capsule contains 7 drops of santyl. See New and Nonofficial Remedies, 1921, p. 270. E. Bilhuber, Inc., New York.

Silver Salvarsan. — A brand of silver arsphenamine N. N. R. For a description of the actions, uses and dosage of silver

arsphenamine, see *Jour. A. M. A.*, May 7, 1921, p. 1312. Silver salvarsan is marketed in ampules containing respectively 0.05 gm., 0.1 gm., 0.15 gm., 0.2 gm., 0.25 gm., 0.3 gm. silver salvarsan. H. A. Metz Laboratories, New York. (*Jour. A. M. A.*, June 11, 1921, p. 1654.)

Cholera Vaccine- (Prophylactic) Lederle.—A cholera vaccine (see New and Nonofficial Remedies, 1921, p. 299) marketed in packages of two 1 c.c. vials containing, respectively, 4,000 and 8,000 million killed cholera vibrios; also in packages of two 10 c.c. vials containing, respectively, 4,000 and 8,000 million killed cholera vibrios per c.c. The Lederle Antitoxin Laboratories, New York.

Plague Vaccine-(Prophylactic) Lederle. —A plague vaccine (see New and Nonofficial Remedies, 1921, p. 304), marketed in 1 c.c. vials containing 5,000 million killed plague bacilli; also in 10 c.c. vials containing 5,000 million killed plague bacilli per c.c. The Lederle Antitoxin Laboratories, New York.

Acne Mixed Vaccine-Gilliland. — A mixed bacterial vaccine (see New and Nonofficial Remedies, 1921, p. 314) composed of B. acni vulgaris, Staphylococcus albus and Staphylococcus aureus in equal proportions. Marketed in packages of four 1 c.c. vials containing, respectively, 250, 500, 1,000, and 2,000 million killed bacteria; also in packages of four syringes containing, respectively, 250, 500, 1,000 and 2,000 million killed bacteria. Gilliland Laboratories, Ambler, Pa.

PUBLISHER'S NOTES

DIPHTHERIA PROPHYLAXIS.

In view of the established fact that diphtheria can be prevented with as much certainty as smallpox or typhoid fever, it is disturbing to find that in certain communities the incidence of diphtheria is not on the wane. The procedure requisite for immunization is simplicity itself. Three subcutaneous injections, at intervals of about five days, of a mixture of toxin and antitoxin (Diphtheria Prophylactic, P. D. & Co.) is all that is needed to confer active immunity.

Because of the time required to elicit the full immune response to Diphtheria Prophylactic, contacts should receive the usual protective dose of the more rapidly acting Diphtheria Antitoxin (Antidiphtheric Serum); Diphtheria Prophylactic may be given a few days later for more lasting effect. But for all individuals who have not been exposed to the disease, and for general prophylaxis in schools, hospitals, nurseries and other communities, the injection of Diphtheria Prophylactic is of itself sufficient.

The caution cannot be too often repeated that, if an individual has been recently exposed or actually has the disease, Diphtheria Antitoxin (Antidiphtheric Serum), because of its rapid action, is the imperative indication.

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ORIGINAL ARTICLES

SUBCONJUNCTIVAL INJECTIONS IN EYE INJURIES.*

W. Herbert Adams, M. D.,
Jacksonville, Fla.

This paper has been written to bring to your attention one definite remedy for, or plan of treating, eye injuries.

I shall present no series of cases treated by me, as statistics are always dry, and can be made to prove anything, although I could easily give you a long list of all varieties of eye injuries and serious eye diseases that have been treated by this method with satisfactory results. I do not wish to be pedagogic or dogmatic in my claims, and yet I mean to be positive in my statements in regard to this remedy, or mode of treatment, and you will have to rely on my statements until you have tried out the method in your own hands.

To come to the point at once I will state that in all eye injuries of a serious nature, which have resulted in, or may result in, an infectious or inflammatory condition of the eye, internally or externally, as a routine method I use subconjunctival injections. The injection usually consists of 30 to 60 minimums of a 1-3000 solution of cyanide of mercury, with which is combined a few drops of a 1 per cent acoin solution, and at times ⅛ gr. morphia and ⅛ gr. dionin; all these ingredients, except the cyanide of mercury solution, are used to lessen the rather severe pain which always follows the injection.

The following is my usual formula for the injection, which may be modified according to age or circumstances:

Sol. hydrarg. cyanide 1-3000, min. 30 to 60.
Sol. acoin 1 per cent, min. 3.
Sol. dionin 5 per cent, min. 2.
Morphia sulp. gr. ⅛.

I usually boil the solution a minute or two immediately before using. The technique of giving the injection is very simple. The conjunctiva of the injured eye is thoroughly cocainized and washed out with a 1-5000 cyanide of mercury solution. The upper lid may be retracted, either with a retractor, held by an assistant, or with the finger pressing backward over the eyebrow, the patient being told to look down all the while; then with fine forceps the conjunctiva is seized, as far from the cornea as possible, the hypodermic needle inserted just under the conjunctiva, and not penetrating Tenon's capsule, and the injection slowly made. It goes without saying that the syringe must be thoroughly sterilized before the injection is begun. The conjunctiva will be raised and have the appearance of a large bleb. The lids may be closed and gently massaged for a few moments.

The entire operation may be performed without any instrument save the hypodermic syringe, and without an assistant, if necessary, and should be entirely painless during, and for a short while after, the injection; but after a short time the pain begins and increases for some hours, and in most cases is rather severe, and will continue from two to six hours. After it subsides there will be no more pain in the eye, either from the original trouble, or from the injection. It is my rule to give the patient three or four aspirin tablets, to be taken at one-hour intervals, and if the pain is particularly severe, a ¼ gr. codein. The pain and reaction varies materially with the strength and quantity of the injection. If the injury, infection or inflammatory condition is severe and urgent and we wish to produce a very pronounced reaction, the injection must be strong and large

*Read before the Second Annual Meeting of The Florida Railway Surgeons' Association, at Pensacola, May 9, 1921.

in quantity. The reaction will reach its maximum in about twelve hours, and the œdema and inflammation of the conjunctiva and lids and the surrounding tissue will last from one to three weeks, but this is exactly what we wish to accomplish, as this is sure evidence that the injection is accomplishing its purpose.

As to the manner by which the injection produces its beneficial results I am unable to state positively. In my opinion the principal cause of the beneficial results is the intense reaction produced. This causes an enormous flow of phogocytic and corrective lymph containing antibodies to the site of the injury. There is, also, produced an enormous increase in the size and secretion of the ciliary and lymphatic vessels. This lymph is nature's antiseptic to the wound.

It is a well-known fact that all penetrating wounds to the eye are extremely liable to be infected, as the tissue of the eye precludes the possibility of strong germicides being used.

The enormous swelling and œdema of the conjunctiva generally closes the mouth of the wound as by a sliding flap of conjuctiva. The germicidal effect of the solution itself probably plays considerable part in the beneficial results, but I cannot believe it plays the major role in the results obtained, as other solutions of less germicidal nature produce practically the same results. I have, however, found the cyanide solution to serve my purpose so well that I use it almost exclusively.

This remedy may be used in any and all eye injuries, which are, or may become serious, either in incised, contused or lacerated wounds. It is especially valuable in deep, penetrating wounds, which cannot be cleansed and are liable to become infectious in nature. It will surely cut short any inflammatory process that may be present, if used in sufficient quantity and strength. Generally one injection of massive size and strength, given early, will be sufficient, but they may be repeated as soon as the reaction has subsided somewhat, if the diseased process has not been entirely arrested. Of course atropine, dionin and other local and systemic remedies should be used in conjunction with the injection; however, they are not to be compared with the subconjunctival injection in promptness in checking the inflammatory or infectious process and healing the wound. The eye should be thoroughly washed out each day for about a week, atropine and dionin instilled twice daily after the first few days, or after the reaction has somewhat subsided.

Do not be alarmed at the violence of the reaction. The conjunctiva may be intensely chemosed, the lids so œdematous that they cannot be opened for the first day or two, and the swelling may extend down the side of the face. You must warn your patient of just what to expect in the way of pain and reaction, or he may think he is "ruined for life"—tell them that the more it hurts and the worse the eye looks, the more good it will do, and they will bear the pain and discomfort with more fortitude.

Eyes that would otherwise have to be enucleated, or eyes that would inevitably be blind can be saved by this method, and retain more or less useful vision. As railway surgeons, we should always bear in mind the probability of damage being sought by the patient, and do all in our power to minimize the injury. An eye saved, though the sight is entirely lost, is considered by the patient and the public as not nearly so serious as if the eyeball were removed, and some vision, even though of not a very useful character, is much better than a totally blind eye.

Permit me to say in closing that I use this injection almost daily in my practice, not only in injuries, but in all cases of inflammation of the external or internal eye—iriocyclitis, optic neuritis, corneal ulcers, interstitial keratitis, retinitis, and to prevent symphathetic ophthalmia. Indeed, its only positive contraindication is acute glaucoma, where it may temporarily cause an increase in tension.

Not many oculists use the injection, and it is with a view to its more general use that this paper has been written. In my opinion it is the greatest single remedy we have in eye

troubles, with the possible exception of atropine. I have never once failed in promptly arresting any case of severe inflammation that I have treated in this manner. I can only say that you will never know the really marvelous results of this method of treating eye injuries until you have given it a personal trial.

Hoping that you will put it to the test in your next case of serious eye injury, assuring you that you will not be disappointed in the result, thanking you for the courtesy of your attention to this rather crude presentation of a tremendously important subject, and hoping for a full discussion of this paper, I thank you.

THE IMPORTANCE OF CONSERVING VITAL POWERS IN RENDERING FIRST AID.*

MARY FREEMAN, M. D.,
Perrine, Fla.

The fact that minor injuries sometimes produce serious results compels us to consider the vital reserve force in all injured patients.

In healthy, vigorous persons an extensive injury may give but very little trouble, while seemingly insignificant injuries in the anemic patient may endanger life.

I make it a part of the first aid to note the general appearance, the eyes, skin and tongue. If the tongue is coated, he is given medicine to clean out the alimentary tract. If the tongue is red showing hyperacidity he is also given sodium bicarbonate. If there is anemia he is given Blaud's mass with cascara, nux, and arsenic, or some other appropriate tonic.

The patient as a whole is considered and assistance is given wherever needed.

But it is in the serious injuries when that "vapor that appeareth for a very little while" *almost* "vanisheth away," as a result of some visible injury or shock, that the surgeon's judgment is called upon to "stand in the gap." The first impulse of the bystander is to rush the patient to the nearest hospital. And they honestly believe that they are doing everything possible to save life, while in reality it may be just the finishing touch needed to extinguish life, nature having had all the rushing she can stand.

When called on the phone to a serious accident I tell them, "Do not try to move the patient until I get there."

In severe brain injuries, if the patient can lie absolutely quiet (and it takes good doses of morphine to keep him quiet), apply ice to the head, and hot bottles to the body and limbs until the clots are well formed. Many apparently hopeless cases will recover. In this class of injuries the initial dose of epsom salts should be considered a part of first aid. It not only eliminates the undigested food, which would otherwise decompose as digestion stops in severe injuries, but it assists in keeping the blood pressure down.

The rolling and turning necessary in changing clothes before the clots are well formed is a hazardous risk. The soiled clothes look bad, but a patient ready for the undertaker looks worse.

Abdominal injuries also need time for the morphine to lock up before moving the patient.

One case in 1914, shot 1½ inches above and to the right of the umbilicus by a S. & W. 38, had thirteen punctures of the intestines. He was seventeen miles from the hospital. By the hypodermic use of morphine and atropine and adrenalin in one and one-half hours he had sufficiently recovered from the shock to be carefully moved to the hospital where Dr. J. G. DuPuis repaired the injuries and the patient recovered.

Had I yielded to the clamor of the citizens to rush off immediately for the hospital he would have landed at the undertakers.

If we could have in civil life a portable outfit to send to wrecks to prevent the necessity of moving the badly injured until they recover from the first shock it would reduce the mortality. And if the ambulances could take a man of experience and judgment to

*Read before the Second Annual Meeting of The Florida Railway Surgeons' Association, at Pensacola, May 9, 1921.

the severely injured instead of a young intern who does not yet know how to conserve vitality, fewer cases would expire on reaching the hospital.

NURSING STANDARDS.*

MARGARETTE L. GREENER, R. N.,
Vice-President State Nurses Association,
Orlando, Fla.

On every side and from every source we hear of the problems of hospitals and training schools. In fact so much is being said, anyone who studies the subject cannot fail to be deeply concerned not only with our problems but with the fact that some radical modifications will have to be made in our training schools if we are going to live up to the rapidly advancing nursing standards of the day.

What, then, is the matter with our training schools? We all state in our circulars, and presumably we all believe, that splendid and unusual opportunities are offered in the field of nursing to the intelligent cultured woman who wishes to prepare herself for a life work which is well worth while from the standpoint of personal satisfaction and service. Why is it then that training schools offering the opportunity of preparation for such work, with little or no personal expense to the student, are not filled to overflowing with the very best type of woman that the country can produce? On the contrary, from all sides we hear of the constantly decreasing number of desirable and suitable applicants.

Another grave cause for concern and anxiety to those vitally interested in nursing education is the criticism that after three years, supposedly spent in actual preparation and training for such work, the graduates of our schools as a whole are not adequately prepared to go ahead with the important work which awaits them. Especially is this true, we are told, in Public Health work, or work along executive or administrative lines.

Conditions throughout the entire world have changed during the past few years as a result of the world's upheaval during the recent war. Nursing needs to keep pace with the demands of the day, although to many of us actively engaged in training-school work it seems as if the necessary changes were never more difficult to accomplish than at the present.

One of our greatest difficulties is that produced by the shortage of applicants. In all parts of the country hospital beds are rapidly increasing in numbers; new hospitals are being built and opened for the use of the public, each imbued with the definite desire to open its own school of nursing; and within established hospitals each year more actual nursing service is being required in all departments, not only in the hospital proper but also in its special departments, such as the dispensary, social service, X-ray, physical therapy, laboratory, etc.

Any program of expansion, development and progress necessitates a marked increase in the annual expenditures of the hospital, and, unfortunately, hospitals are already facing greatly increased financial burdens without any immediate prospect of proportionate increase in their income.

Because of the fact that the work of the hospital is humanitarian as well as educational in character, the physical welfare and nursing of sick patients cannot be sacrificed, not even to the education of the nurse; on the other hand, neither can the education and physical fitness of our young student nurses be sacrificed to the needs of the hospital. Some of the most serious problems, then, that seem to be demanding solution are:

1. What immediate steps shall be taken to improve conditions and methods of training so that our schools will attract student nurses of the right type in sufficient numbers?

2. How shall the hospital give adequate nursing care to its patients and at the same time make provision for the proper education of its student nurses?

3. How can we reorganize the training school to meet the standard of today and who shall decide what form of reorganization is best?

*Read before the Florida Midland Medical Society, at Orlando, October, 1920.

4. How can sufficient funds be secured for such a purpose?

Answering question number one, as to what steps should be taken to improve conditions and methods of training in order to attract student nurses of the right type in sufficient numbers, first and most important is the shortening of the long hours of duty of the student nurse. Fortunately, hospitals throughout the country are practically unanimous in recognizing the justice and desirability of this change, and in most cases they are working toward this end with the hope of solving at least this problem in the near future.

Changes should be made in our methods so that a three-year course of training shall be more distinctly educational and sufficiently broad in scope to prepare nurses to enter the executive hospital field or the field of Public Health Nursing. We are doubtless all agreed that our student nurses should not find it necessary to spend more than three years in acquiring such training. Many of us are asking ourselves whether, in order to give a complete training and also to meet the argument so frequently advanced, that nurses, like medical students, should all be trained along the same general lines; it might not be desirable to institute a two-year and three- or four-month course of training along carefully arranged general lines; this course to be taken by every student entering the school, with the regular school diploma awarded at the end of the course, provision being made for immediate continuation of the work in a highly specialized postgraduate course of elective work covering an eight-month period for students desiring to prepare themselves for special work. Students intending to do private duty nursing might not desire to take this extra course; undoubtedly all others would.

Should this change be made we would not be doing what many are attempting to do today, when they give from three to six months' specialized work to every student in the school regardless of her ability or fitness for such service or of her expectation or desire to ever make use of such training.

It is a question whether hospitals might not really profit rather than lose by this apparent reduction of time, as it is a certainty that the more ambitious and desirable type of student would generally elect to continue the last eight months' work in order to secure the extra training and the postgraduate certificate which would carry considerable prestige with it.

We must face the fact that large numbers of young women entering our schools today are doing so for the sole purpose of being prepared for Social Welfare or Public Health work, and it is as unjust to deprive them of the opportunity of preparation for this work as it would be to deprive them of the opportunity of obstetrical or operating-room training. The plan of establishing schools on this general basis also suggests the idea that hospitals with special facilities and equipment for postgraduate work of value might afford the opportunity of affiliation with smaller carefully selected schools where such work is not possible. This would afford students from smaller schools the greatly needed opportunity of preparation for special elective work.

The idea of introducing a shortened period of training in addition to an eight-hour day seems a startling one at first sight, but might not such changes help us to solve the problem of the shortage of applicants, and at the same time make it possible to prepare a larger number of nurses for the needs of the public in a shorter period of time? It would certainly help us to maintain standards which promise to be utterly demolished if a general course of training of one year or less for nurses, attendants, or any other group, becomes an established practice without adequate safeguards as to licensing or supervision of training. If the nursing profession does not boldly face the many complex nursing problems which today confront us and if we do not point out logical and satisfactory methods by which such problems may be solved, we may rest assured that others can and will undertake this piece of work for us.

Hospitals and training schools of the country, moreover, should spare no effort to endorse and participate in the work of publicity concerning nursing education, the necessity for which is being so strongly agitated through the national nursing organizations.

This publicity campaign, if successful, should yield many interesting and significant facts and serve as a basis for many recommendations of greatly needed changes and improvements.

Our second problem is also of a most serious character. How shall hospitals be enabled to give adequate care to their sick patients and at the same time give to their student nurses a suitable and satisfactory nursing education and shorter hours?

The answer may be brief. First, by employing more graduate nurses on the permanent staff of the hospital, especially on the night force. Second, by the use of paid helpers or hospital maids, at least one of whom could be used to good advantage on every large hospital ward. Third, and I purposely place this suggestion last, by the use of graduate attendants who have been trained in institutions registered for that purpose and controlled by State law. Until legislation for the control and regulation of this group has been enacted, training schools and hospitals will find the use of attendants a dangerous procedure, and one apt to work out more harm than good ultimately. Any attempt to train attendants and student nurses in the same institution must be regarded not only as undesirable but as apt to result in danger and disaster to the training school itself.

Problem three. The newly organized American Conference on Hospital Service which has come into existence so recently, affords an opportunity for the development of a comprehensive program for the nation, through the combined thought and effort of medical, lay, and nursing groups, each of whom has hitherto considered the problem independently.

It is but natural that nurses in dealing with this problem should emphasize nursing standards, the details of nursing education and the professional status of nurses. And we believe that the control of nursing education and the protection of the rights of the nurse, both as undergraduate and as graduate, are of vital concern to the public.

The physician's point of view has been somewhat different. At the bedside the nurse is the physician's assistant and he is therefore interested primarily in obtaining an unlimited supply of faithful assistants ready to perform such tasks as may be assigned to them. With the demand for the services of nurses in fields apart from bedside nursing, many physicians have not been particularly concerned. Taking what they evidently believed to be their patients' viewpoint, they have generally looked askance at any tendency toward the raising of nursing standards which was likely to be accomplished by an increase in the cost of nursing service. With but few exceptions, physicians have concerned themselves but little with methods of teaching and have had little sympathy with legislation designed to protect the nurse as well as the public from imposition and fraud. The physician has evidently felt that he was fully qualified to protect his patients by the exercise of his personal judgment in the selection of nurses and bedside attendants; that legislative standards and the activities of nursing organizations which have prompted protective legislation were more or less superfluous.

Also hospital trustees have been torn between conflicting desires. They have felt it to be their duty to train large numbers of nurses in order to satisfy the public demand; and in seeking to enroll large numbers of probationers in the hospital schools they have undoubtedly been influenced also by the hospital's own nursing needs. Compelled by financial necessity, they have at times opposed what nurses have regarded as just demands for improvement in working conditions; and, without claiming to be expert in matters of

nursing education, they have nevertheless demanded that they be recognized as the responsible managers of training schools.

And so, during the past decade, there have been two and sometimes three forces arrayed against each other in the struggle to readjust and improve nursing standards and service in and out of hospitals. Opinions have clashed, but there has been no meeting of minds; the result has been confusion of thought and effectual interference with progress. Under these conditions, one looks forward eagerly to the effort, through the American Conference on Hospital Service, to debate the issue fairly and to develop a program which will come reasonably near to meeting all essential requirements.

Might it not be wise to attempt to bring about the organization of similar mixed committees in each of the states? The appalling lack of unity of mind and purpose in New York alone is surely a striking example of such a need. If the medical, nursing, and representative lay forces of each state could be prevailed upon to combine thought and effort and lay aside personal jealousies and petty differences of opinion, there is nothing in the line of progress and advancement which would not be comparatively easy of accomplishment.

How to secure sufficient funds. I know that many people would say with great emphasis "by special endowments for the training schools." One must say in regard to such a plan that wherever it can be accomplished it is ideal. Unfortunately at the present moment but few schools could secure immediate endowments at all adequate to their needs. Therefore, it would appear that the only logical way in which to meet the increased expense of both hospital and training school is by community or municipal support in the same manner in which our public schools are maintained.

Until very recently hospitals and training schools throughout the country have struggled alone with the responsibility of the education and training of the nurse. It has taken years of education and a great war to awaken us to the fact that the health and welfare of the nation depends largely upon the attitude of the general public concerning medical and nursing education and control. A recent writer on this subject has said "not even our public-school system is of any more importance to the future welfare of the country than is the organized work of Public Health Nursing. From the cradle to the grave our people take no important step in which they do not at once feel the importance of this group. We cannot soberly contemplate the huge health problems of the war and their future readjustments without trembling at the risk we run in not preparing to meet such needs."

The general public today is demanding that training schools shall graduate efficient and properly trained nurses capable of performing their important work in the nursing care and health education of the community. I quote from an editorial which appeared in the *New York Evening Sun*, October 17, 1919: "One of the biggest jobs undertaken by anybody in New York is that of the health nurse. She attempts to teach our citizens 'how to get the best kind of living conditions out of the circumstances that surround them.' Could the wisest men in the world do more?"

Surely it is not unreasonable for us to expect that a community which requires service of so broad and valuable a character from its graduate nurses, be also sufficiently intelligent to realize that progress and development in our schools of nursing can only be assured when adequate financial support is obtained and when schools of nursing are granted the recognition afforded other educational organizations. Then, and not until then, will the training schools be enabled to give a dignified and suitable preparation to the young women of superior intelligence and ability who will only enroll for such work when many of our present obsolete methods are eliminated and when nursing education becomes an actuality and not merely a name.

PROPAGANDA FOR REFORM

Vaccines For Common Colds. — There is no scientific evidence that common colds can be prevented by the use of vaccine, despite the glowing recommendations of vaccine makers and the patter of the detail man. Colds characterized by catarrhal inflammation of the mucous membranes of the nose and the throat are caused by various organisms. The organism concerned in one epidemic is different from that in another. It is impossible to anticipate what organism is about to invade the household or community. Inoculation of mixed vaccines fails to produce immunity. (*Jour. A. M. A.*, November 13, 1920, p. 1361.)

"Lepso"-Epilepsy Cure. — Like most epilepsy "cures," Lepso was found by the A. M. A. Chemical Laboratory to be essentially a bromid mixture. It was found to contain the equivalent of 51 grains of potassium bromid to the dose. (*Jour. A. M. A.*, November 20, 1920, p. 1443.)

Cod Liver Oil in Rickets.—For many years cod-liver oil has been regarded almost as a specific against rickets in children. During recent years it has been made reasonably certain that the administration of cod-liver oil alters the calcium balance in such a manner that calcium will be retained in the body and that it increases the capacity of rachitic children to take up and hold calcium. Since the beneficial effects of cod-liver oil on rickets may be due to its liberal content of vitamine A, frequently described as the Fat-Soluble food accessory, it is interesting to know that crude unrefined cod-liver oil may be 250 times as rich as butter in vitamine A and that samples of refined oil, although not so active as the crude oil, were also far superior to butter in their vitamine potency. The ease with which the Fat-Soluble A Vitamine of cod-liver oil is destroyed by reagents and drastic manipulations make the various "refinements" of cod-liver oil products sold as proprietary preparations even more reprehensible than they have seemed in the past. (*Jour. A. M. A.*, April 9, 1921, p. 1009.)

Iodex, A Misbranded Iodin Ointment. —(1) Claim: 5 per cent iodin. Finding: iodin content only about 3 per cent. (2) Claim: free iodin. Finding: no free iodin. (3) Claim: absorbed through the skin, iodin can be found in urine 30 minutes after inunction. Finding: the assertion that iodin can be found in the urine after iodex has been rubbed on the skin has been experimentally disproved. The preceding is taken from a poster of the A. M. A. Chemical Laboratory at the A. M. A. New Orleans meeting. (*Jour. A. M. A.*, September 18, 1920, p. 830.)

More Misbranded Venereal Nostrums. —The following preparations have been the subject of prosecution by the federal authorities charged with the enforcement of the Food and Drugs Act, on the ground that the therapeutic claims made for them were false and fraudulent: Injection Malydor (The Williams Mfg. Co., Cleveland, Ohio), essentially a dilute watery solution of boric acid, phenol, a zinc salt, glycerin, acetanilid and unidentified plant material. G Zit (The Stearns Hollinshead Co., Inc., Portland Oregon), bougies consisting essentially of cacao butter and a silver compound. G Zit Antiseptics (The Stearns Hollinshead Co., Portland, Oregon), composed essentially of oils of copaiba and cubebs, and a compound of sulphur. Hinkle Capsules (Hinkle Capsule Co., Mayfield, Ky.), consisting essentially of powdered cubebs, copaiba and cannabis indica. Tisit-Pearls (S. Pfeiffer Mfg. Co., East St. Louis, Ill.), consisting essentially of a mixture of oil of sandalwood, balsam of copaiba, oil of cinnamon and a fixed oil. Tisit (S. Pfeiffer Mfg. Co., East St. Louis, Ill.), a watery solution of zinc sulphate, thymol, alum and glycerin. Black-Caps (Safety Remedy Co., Canton, Ohio), consisting essentially of copaiba, cubebs and saw palmetto. Hexagon (Montebello Laboratories, Kansas City) an injection consisting essentially of a watery solution of zinc sulphocarbolate, boroglyceride and bismuth subnitrate and capsules containing hexamethylenamin. Hyatt's A. B. Balsam (C. N.

Crittendon Co., New York City), consisting essentially of potassium iodid, alum, Epsom salt, plant extractives and unidentified alkaloids, sugar, glycerin and alcohol. Du-Quoin's Compound Santal Pearls (Wm. R. Warner and Co., Inc., New York City), consisting essentially of a mixture of santal oil and copaiba. (*Jour. A. M. A.*, Oct. 2, 1920, page 954.)

Succus Cineraria Maritima. — The medical profession is at present receiving through the mail circulars extolling this nostrum for its alleged virtue in "absorbing" various forms of cataract. In February, 1917, the Bureau of Chemistry of the U. S. Department of Agriculture issued a Notice of Judgment which showed that the government authorities had prosecuted the firm which markets the preparation—The Walker Pharmacal Company—because claims were made on the trade package to the effect that this nostrum was a remedy for cataract and other opacities of the eye. The authorities charged that these claims were false and fraudulent. To this charge the company pleaded guilty, but these claims are still being made through other avenues to the medical profession. (*Jour. A. M. A.*, Oct. 9, 1920, page 1007.)

The Use of Arsphenamine and Related Compounds.—Many therapeutic perplexities remain after nearly a decade of trial of the type of compound which Ehrlich introduced. It is well for the practitioner to realize this, especially when expert workers still make an appeal for conservative interpretation. Arsphenamine has apparently made it possible or even probable, but only to the inexperienced has the cure of syphilis been made absolute and inevitable. Even the composition of arsphenamine and neoarsphenamine is not fully known, and the control of the products by the government is important. It should be borne in mind also that neoarsphenamine behaves differently in the animal organism from arsphenamine, and should not be regarded simply as arsphenamine in a convenient form for administration. The various brands of arsphenamine and neoarsphenamine made in the United States compare favorably as to toxicity with those made abroad. (*Jour. A. M. A.*, Oct. 9, 1920, page 1005.)

Bran-O-Lax Tablets. — The public is urged to purchase these "Laxative Wheat-Bran Tablets for constipation and indigestion instead of those severe and harmful drugs." The essential claims either inferred or expressed, are to the effect that Bran-O-Lax Tablets are wheat bran in condensed form and that they are free from "harmful drugs." It is also claimed that "Bran-O-Lax contains one heaping tablespoonful of plain nutritious wheat bran condensed into table form." The A. M. A. Chemical Laboratory reports that Bran-O-Lax Tablets contain wheat bran, reducing sugar (probably glucose) in large amounts, a gummy substance, probably acacia, and about one grain of phenolphthalein per tablet. Whereas a heaping tablespoonful of wheat bran was found to weigh about 166 grains, the total weight of a Bran-O-Lax Tablet was only about 35½ grains. (*Jour. A. M. A.*, Oct. 16, 1920, page 1083.)

Toxicity of Arsphenamine.—Roth has determined that if an alkalized solution of arsphenamine or a solution of neoarsphenamine is shaken in the presence of air for one minute, the toxicity is increased. He points out that arsphenamine preparations which are soluble with difficulty are likely to be shaken to aid in the solution of the drug with the risk that chemical reaction may occur. (*Jour. A. M. A.*, Oct. 16, 1920, page 1072.)

Chaulmoogra Oil In Leprosy. — Continued trials made at the leprosy investigation station of the U. S. Public Health Service and the Kalihi Hospital at Hawaii seem to justify more than ever the statement that chaulmoogra oil contains one or more agents that exert a marked therapeutic action in many cases of leprosy. The intramuscular injection of the soluble thyl esters of the fatty acids from chaulmoogra oil usually leads to a rapid improvement in the clinical symptoms of leprosy. The ethyl esters of iodin addition compounds of the unsaturated

fatty acids in chaulmoogra oil have also been used. There is no experimental proof that this addition of iodin causes any increase in the effectiveness of the material used. (*Jour. A. M. A.*, Oct. 16, 1920, page 1071.)

More Misbranded Products. — The following products have been the subject of prosecution by the federal authorities: Salubrin (Salubrin Laboratories, Grand Crossing, Chicago) was held to be misbranded because the therapeutic claims made for it were false and fraudulent. Dolomol Calomel and Dolomol Iodoform (Pulvola Chemical Co., Jersey City, N. J.) were held to be adulterated and misbranded because they did not have the composition claimed. Influenza Special (Senoret; Senoret Chemical Co., St. Louis) was misbranded because the therapeutic claims made for it were false and fraudulent. Gray's Ointment (Dr. W. F. Gray and Co., Nashville, Tenn.) was misbranded because the therapeutic claims were false and fraudulent. Vegetable Blood Purifier (Gibson-Howell Co., Jersey City, N. J.) was held misbranded on the ground that the therapeutic claims were false and fraudulent. Renovine (Van Vleet-Mansfield Drug Co., Memphis, Tenn.) was held to be misbranded because the therapeutic claims were false and fraudulent. Cin-Ko-Na and Iron (De Lacy Chemical Co., St. Louis) was declared misbranded because the curative claims were false and fraudulent. Craig Healing Spring Mineral Water (Craig Healing Springs Hotel, New Castle, Va.) was held to be misbranded because the therapeutic claims were false and fraudulent. Laxa-Cura Water (Laxa-Cura Water Co.) was held to be adulterated and misbranded because it consisted in part of a filthy and decomposed putrid animal and vegetable substance, and because the alleged analysis was incorrect and because the curative claims were false. Reuter's Little Pills for the Liver (Barclay and Co., New York) were held misbranded because the curative claims were false and fraudulent. (*Jour. A. M. A.*, Oct. 23, 1920, page 1150.)

Sukro-Serum and Aphlematol.— About two years ago, American newspapers contained accounts of an alleged cure for pulmonary tuberculosis "discovered" by Prof. Domenico Lo Monaco, of Rome, Italy. Reports indicated that this so-called Italian Sugar Cure for Consumption consisted of the intramuscular injection of solutions of sucrose (saccharose—cane sugar). Now the Council on Pharmacy and Chemistry reports on two proprietary preparations based on the "sugar cure" which are being exploited in this country: Sukro-Serum and Aphlegmatol. Sukro-Serum is marketed by the Anglo-French Drug Company. A circular issued by this company described Sukro-Serum as a "sterilized solution of lacto-gluco-saccharose." By reading this circular to the end, however, one learns that "Sukro-Serum" is not a "serum" in the ordinary sense, but apparently it is a solution of ordinary sugar (sucrose). Aphlegmatol is sold by G. Giambalvo & Co. The circular enclosed with a package of this preparation contains the following, with reference to the composition: "A solution of Hydrate of Carbon after the formula of Professor D. Lo Monaco, Director of the Institute of Physiological Chemistry of the University of Rome. Contents: *Sucrose* ($C_{12}H_{22}O_{11}$) *Glucose and Galactose* ($C_6H_{12}O_6$)." The preparation was found to contain a reducing substance, probably glucose, amounting to about 7.4 per cent. After hydrolysis, 55.5 per cent of glucose was found. The advertising for Aphlegmatol appears to be the work of those ignorant of the English language. These two preparations appear to be nothing more than concentrated solutions of sugar. It is probable that a small amount of cane sugar might be inverted into glucose and fructose, but experiments have shown that cane sugar subcutaneously administered in the small amounts used in this instance is largely excreted in the urine unchanged. Less is known about galactose, but the evidence available would indicate that galactose is largely excreted in the urine unchanged when given subcutaneously. Glucose would

be absorbed as such, and the amounts under consideration, used by the system much the same as when given by mouth. (*Jour. A. M. A.*, August 21, 1920, p. 556.)

Iodex and Liquid Iodex.—The A. M. A. Chemical Laboratory examined Iodex in 1915 and found that it contained only traces of free iodin, though claimed to contain "5 per cent therapeutical free iodin." Even the total quantity of iodin was shown to be only about one half of the 5 per cent claimed to be present as free iodin. An analysis of the Iodex sold in 1919 demonstrated that the preparation is essentially the same as that sold in 1915, that is, it was found to contain no free iodin and only about three-fifths of the total amount of iodin claimed. The laboratory points out that the synonym used for Iodex, "Ung. Iodi, M. and J.," is in obvious conflict with the Food and Drugs Act in that, though sold under a name recognized in the U. S. Pharmacopeia, it does not conform to the standards for Ung. Iodi. of the pharmacopeia. The laboratory further reports that Liquid Iodex, sold with the claim that it is a preparation having the properties of free iodin, is a reddish liquid with an odor like oleic acid, containing but little (0.16 per cent) free iodin and only about three-fifths of the total iodin claimed. (Reports of the A. M. A. Chem. Lab., 1919, p. 104.)

Chloron, Chlorax and Number "3."—The Council on Pharmacy and Chemistry has examined Chloron, Chlorax and Number "3," manufactured by the Chlorine Products Company, Inc., New York. The products have been declared inadmissible to New and Nonofficial Remedies. The report of the Council—which in accordance with the usual procedure was submitted to the Chlorine Products Company before its publication was authorized—sums up the Council's findings thus: (1) All are of unreliable composition. (2) The therapeutic claims made for the preparations are not substantiated by evidence and are unwarranted and misleading. Chloron is inferior as an antiseptic to the well-known surgical solution of chlorinated soda because of its low chlorin content and uncontrolled reaction. There is no warrant for the claim that Chlorax is useful in the treatment of "Kidney Conditions," "Diabetes," "Acute Infections," "Blood Dicrasias," "Lithemias and Rheumatism," and "Nervous Conditions," nor is there warrant for the claim that "Number '3'" is a "blood purifier" or a "syphilis remedy." (3) The names of these pharmaceutical mixtures are not descriptive of their composition. (4) All three preparations are irrational. No evidence has been furnished that the lithium salt is of value in the mixtures. It is not rational to combine an active chlorin preparation and a mercury salt in one mixture, nor is there evidence that the addition of opium to the preparations proposed for internal use is of value or rational. Experimentation with Number "3" as a "syphilis remedy" is to be severely condemned in that those on whom it is used will, in the meantime, be deprived of efficient medication. (Reports Council Pharmacy and Chemistry, 1919, p. 70.)

Physician's Stock In Prescription Products.—Is the public getting a square deal when physicians are financially interested in the products that they may be called on to prescribe? Is the average layman's confidence in the medical profession likely to be enhanced when he learns that the physician to whom he went for treatment has a financial interest in the therapeutic agent which was prescribed? It cannot be too often emphasized that it is against public interest and scientific medicine for physicians to be financially interested in the sale of products which they may be called on to prescribe for the sick. It is perfectly true that there are many physicians who would not consciously permit financial considerations to warp their judgment, but it is not humanly possible to remain unbiased in cases of this sort. (*Jour. A. M. A.*, December 11, 1920, p. 1662.)

Chaulmoogra Oil. — Chaulmoogra Oil is obtained by expression from the seeds of an East Indian tree, Taraktogenos kurzii. Closely related oils are obtained from

Hydnocarpus wightiana Blume, and H. anthelmintica Pierre. This class differs from other known oils in being composed chiefly of the glycerol esters of two unsaturated fatty acids, named chaulmoogric acid and hydnocarpic acid. In India, chaulmoogra oil has been used both orally and externally in the treatment of leprosy since prehistoric times. Tourtoules used the oil subcutaneously in 1899. V. D. Heiser used the oil in 1914 for the treatment of leprosy by intramuscular injection. Leonard Rogers used orally a mixture of the fatty acids from the oil, which he called gynocardic acid, and later used the sodium salts of these acids subcutaneously (1916), and later on intravenously. Hollman and Dean employed the ethyl esters of the fatty acids from the oil in 1919. (*Jour. A. M. A.,* November 13, 1920, p. 1361.)

More Misbranded Nostrums.—The following products have been the subject of prosecution by the federal authorities: Dr. Clifton's Brazilian Herbs (Clifton Drug Co.), sold under therapeutic claims which were false and fraudulent. Her-Vo (Her-Vo Mfg. Co.), sold with therapeutic claims which were false and fraudulent. Acetylo-Salicylic Acid Tablets (James and Annis), containing acetanilid but no acetylsalicylic acid. (*Jour. A. M. A.,* November 13, 1920, p. 1359.)

More Misbranded Nostrums.—The following products have been the subject of prosecution by the federal authorities in charge of the enforcement of the Food and Drugs Act: Stearns' Santolods (Frederick Stearns and Co.), misbranded in that the therapeutic claims were held to be false and fraudulent. Milk's Emulsion (Milk Emulsion Co.), misbranded in that it was falsely claimed to be of benefit in incipient consumption, bronchial asthma, pneumonia, etc. Bliss Native Herbs (Alonzo O. Bliss), misbranded in that the terapeutic claims were held to be false and fraudulent. Madame Dean Antiseptic Vaginal Suppositories (Martin Rudy), misbranded in that the therapeutic claims were held to be false and fraudulent. Halz Tablets (Ed. Price Chemical Co.), mismisbranded in that the curative claims were held to be false and fraudulent. D. D. D. Ordinary and D. D. D. Extra Strong (D. D. D. Co.), misbranded in that the curative claims were held unwarranted. (*Jour A. M. A.,* November 20, 1920, p. 1442.)

Chlorlyptus Not Accepted for N. N. R.—Chlorlyptus (Weeks Chemical Co.) is a chlorinated eucalyptus oil containing 30 per cent of chlorine in relatively stable combination. It is claimed to be a new "chlorinated antiseptic," highly efficient as a wound antiseptic. It is proposed for use in local infections, burns and as an antiseptic in the alimentary and urinary tract. The laboratory investigation made in the A. M. A. Chemical Laboratory and by the referee of the Council on Pharmacy and Chemistry who was in charge of the product showed that Chlorlyptus is a feeble antiseptic, considerably weaker than eucalyptus oil. The chlorin contained in it is bound too firmly to have any action; in fact, the chlorination has merely weakened the eucalyptus oil. The clinical evidence submitted by the manufacturer did not demonstrate the value of Chlorlyptus. The Council on Pharmacy and Chemistry voted not to accept Chlorlyptus for New and Nonofficial Remedies because of the unfavorable results of the laboratory investigations, but with the agreement that the product will receive further consideration if more convincing clinical data become available. (*Jour. A. M. A.,* November 27, 1920, p. 1512.)

Lash's Bitters.—A physician reports that he was called to see a patient who had consumed ninety-one bottles of Lash's Bitters in thirty-six days. Previously the patient had consumed Wine of Pepsin in about the same amount. The amount of Lash's Bitters consumed is equivalent to about twenty ounces of straight whiskey daily. The label on the Lash's Bitters bottle declares "Guaranteed free from habit-forming or injurious drugs." (*Jour. A. M. A.,* April 9, 1921, p. 1029.)

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NOTES FROM THE BOARD OF MEDICAL EXAMINERS.

The Florida Board of Medical Examiners will meet in Tallahassee on October 11th at the Leon Hotel.

At the meeting held in Jacksonville recently forty-three applicants were examined and thirty were issued licenses to practice medicine in Florida.

The Florida Board of Medical Examiners is composed of representatives of the eclectic, homeopathic and allopathic schools of medicine.

Only graduates of recognized schools of medicine of the different cults are permitted to take the examination in Florida, those who graduated prior to 1918 being excepted.

No allowances are made for age or years of practice.

No reciprocal arrangements have been effected.

The Board of Medical Examiners for Florida has full power to revoke licenses to practice in Florida, action of the board being subject to review by the circuit judges of the state.

Dr. J. M. Jackson is president, Dr. W. M. Rowlett is secretary, Dr. William J. Buch is vice-president.

Complete harmony exists and the representatives of the different schools have been able to meet on a basis of complete co-operation. High standards is the watchword. No difficulty will be experienced in securing a prompt hearing on charges of irregularities.

The Board of Medical Examiners invites information and co-operation in correcting any irregular practice in Florida.

It is hoped that the next legislature will see the value of standardization of requirements for practice in Florida and that all practitioners of the healing art in any of its ramifications will be under the control of a single composite Board of Medical Examiners.

Correspondence with the secretary, Dr. W. M. Rowlett, is freely invited.

REVIEWS FROM CURRENT LITERATURE

THE THYROID GLAND AND ITS ACTIVE AGENT, THYROXIN, IN THE TISSUES OF THE BODY

Plummer, Henry S.: "Interrelationship of Function of the Thyroid Gland and of Its Active Agent, Thyroxin, in the Tissues of the Body." Journal A. M. A., Vol. 77, No. 4, p. 243, July 23, 1921.

The essential function of the thyroid is the manufacture of thyroxin. This substance was isolated by Kendall in 1914, and proved to be the active agent of the gland. Thyroxin is active directly or indirectly in the cells throughout the tissues of the body. It hastens the rate of formation of potential energy available on excitation of the cell.

Hyperthyroidism is the physiologic status of an individual when the thyroxin in the tissues is sufficient to hold the basal metabolism above normal. All the phenomena in pure hyperthyroidism are those that must attend a sustained elevation of basal metabolism.

Thyroxin is best administered intravenously. A single dose of thyroxin, sufficient to bring the basal metabolism to normal, brings the physiologic status of thyroidless patients to normal in from ten to twelve days, holds it approximately normal for ten days and returns to the former status in from five to seven weeks.

The amount of thyroxin in the tissues (exclusive of the thyroid) is approximately 14 mg. The average daily exhaustion of thyroxin in the tissues is between 0.50 and 1 mg. A shift of 1 mg. of thyroxin in the tissues of the body is accompanied by a corresponding rise and fall of between 2 and 3 per cent of the basal metabolism. Fourteen milligrams of thyroxin given to a thyroidless person is not fully exhausted until the end of the fifth to eighth week. Two milligrams of thyroxin a day may hold the basal metabolism from 20 to 30 per cent above normal; 3 mg. a day may hold the basal metabolism 50 per cent above normal.

We may assume that the normal stimulation of the thyroid is brought about by a drop in the amount of thyroxin in the tissues of the body. There are approximately 10 mg. of thyroxin in 150 gm. of desiccated thyroid. The physiologic reaction following the administration of thyroxin is identical with that following the administration of fresh or desiccated thyroid gland. Absorption from the intestinal tract is very erratic.

A daily oral dose of 1.6 mg. of thyroxin will hold the basal metabolism of most thyroidless persons within the normal limits. The basal metabolism of a thyroidless individual is from 30 to 40 per cent below the average normal. The edema of myxedema becomes recognizable when the basal metabolism drops from 15 to 17 per cent below normal. In a myxedematous person having a basal metabolism ranging near this point, the edema may appear after stress, and disappear after rest. Sustained stress exhausts the thyroxin more rapidly than it can be produced by the thyroid, and the basal metabolism drops a few points. A recognizable edema may appear and reappear with a shift of 1 mg. or less of thyroxin in the tissues. A drop in the basal metabolism to 40 per cent below normal does not cause edema in the conditions not primarily due to hypothyroidism. This relation of edema to the basal metabolism is of the highest significance in the differential diagnosis of primary hypothyroidism and of the other conditions with which a low metabolism is associated.

Goiter may consist of: (1) hypertrophy of the alveolar epithelium; (2) an increase of the intra-alveolar colloid, and (3) the development of new alveoli. Goiter is therefore classified: (1) hypertrophic; (2) colloid, and (3) adenomatous.

Three clear-cut abnormal physiologic states are associated with anatomic changes in the thyroid: (1) pure hyperthyroidism; (2) pure hypothyroidism, and (3) exophthalmic goiter.

A definite syndrome of hyperthyroidism is, with rare exceptions, associated with diffuse hypertrophic or adenomatous goiter, or follows the administration of thyroxin.

The status of exophthalmic goiter, while in the main hyperthyroid, cannot be attributed wholly to an excess of the normal thyroid product. The characteristics of exophthalmic goiter may be due to an incomplete thyroxin molecule.

The thyroid is subject to the laws of rest and repose. It stores thyroxin, iodin and colloid, and during periods of stress it absorbs a portion of the colloid, utilizes the stored iodin and delivers thyroxin to the blood stream. Hypertrophy is indicative of a relatively high degree of stimulation. Intensive stimulation will cause hypertrophy and hyperfunction.

Iodin favors the disappearance of colloid goiter. Marine has demonstrated that iodin administration prevents the development of diffuse colloid goiter in man. In the diffuse colloid goiter of adolescence, with distended thyroid arteries, bruit and loud thrill and a basal metabolism from 8 to 15 per cent below normal, a remarkable change takes place in from twelve to twenty-four hours following the administration of thyroxin. The bruit and loud thrill disappear and the whole gland rapidly shrinks in size.

Continued use of thyroxin prevents the reappearance of goiter. After absorption of the colloid, in many instances, iodin will prevent its redeposition. The one known factor interfering with the production of thyroxin is a shortage of iodin.

ADENOMATOUS GOITERS.

The colloid goiter usually disappears before the twenty-fifth year, but there is a tendency for a thyroid once overloaded with colloid to retain more than the normal amount. Adenomatous nodules which have their incipiency in the colloid goiter never disappear, although they fluctuate much in size.

The administration of iodin may prevent the formation of colloid goiter. To control adolescent goiter means to control adenomatous goiter also. The adenoma either hyperfunctions or stimulates adjacent thyroid tissue to hyperfunction. Adenomatous tissue seldom causes hyperthyroidism before the latter half of the third decade, but once this tissue has started to function, it does so erratically and without relation to the needs of the individual. After resection of the adenomatous tissue, basal metabolism drops to normal within eighteen days, and there is no tendency to a recurrence of hyperthyroidism.

It is characteristic of hyperthyroidism to come on insidiously over a long period and to run a course of low intensity. It is brought to attention by the phenomena attributable to fatigue and by resulting degenerative changes, rather than by changes indicating a hyperthyroid state.

Infection of the thyroid can stimulate the gland to hyperfunction. The introduction of bacteria into the digestive tract is an important factor, if not the primary cause of endemic goiter.

THE DIPHTHERIA BACILLI AND DIPHTHEROIDS OF THE ADENOIDS AND TONSILS

Pilot, Isadore: "The Diphtheria Bacilli and Diphtheroids of the Adenoids and Tonsils." Journal of Infectious Diseases, Vol. 29, No. 1, p. 62, 1921.

The article begins with "The tonsils are the foci that usually harbor diphtheria bacilli in carriers, and their removal frequently terminates the carrier state."

After a review of the literature on the subject the observation is made that in the previous work practically no attention has been paid to the adenoids.

The paper is based on the findings from material from 100 children who had tonsils and adenoids removed chiefly because of hyperplasia. All were afebrile and had no evidence of acute inflammation of the throat or respiratory passages. "A reliable history of diphtheria was not to be obtained in any case."

The adenoids and tonsils showed no pathological change other than hyperplasia.

Diphtheria bacilli were recovered in twelve instances from the adenoids and from one or both tonsils. In no instance were they recovered from one or both tonsils and not from the adenoids.

Diphtheroids were more frequently found and these were more often recovered from the adenoids.

Of the twelve strains two were highly virulent, one gave a low virulence and three produced local abscesses, hemorrhages in mucous membrane and muscles, the other six were avirulent.

SYPHILIS

Guy, W. H.: "A Valuable Method of Treatment in Selected Cases of Syphilis." The American Journal of Syphilis, Vol. V, No. 3, p. 496, July, 1921.

Guy gives a very intensive technique for the treatment of early syphilis, modification slightly to that of Pollitzer and others for arsphenamine administration in the beginning of a syphilitic infection. The author recommends the intravenous dose of arsphenamine to be calculated at the rate of .1 gm. to each 30 pounds of weight of the patient, *i. e.*, a .5 gm. dose for a 150-pound patient. The injections to be repeated on three successive days, and followed in three days by an intramural injection of 1 gr. of salicylate of mercury, and the mercury injections to be repeated weekly for three doses. All of the above to be repeated in the two following months. In other words, Guy recommends a complete saturation with both arsphenamine and mercury to the point of tolerance for three months.

SYPHILIS

Hazen, H. H.: "The Diagnosis of Syphilis." The American Journal of Syphilis, Vol. V, No. 3, p. 472, July, 1921.

In this article, Hazen gives twenty-five valuable procedures that should be considered in making a correct diagnosis of syphilis. In the first part of the article Hazen has the following important considerations:

"One rule which the author attempts to impress upon his students is the following: Be quick to suspect syphilis; be slow to diagnose syphilis. For the past ten years there has been entirely too great a tendency upon the part of the medical profession at large to make this diagnosis upon insufficient evidence. Each week patients are seen who have been told that they must have a course in arsphenamine, some times for pityriasis rosea, sometimes for some minor skin affection (only the day that this was written a patient with ringworm narrowly escaped antisyphilitic treatment), and sometimes upon the rather scanty evidence of a single weak Wassermann reaction.

"Entirely too much stress has been placed upon the Wassermann by the average practitioner; the old kodak advertisement has been replaced in medicine by 'The Wassermann will make the diagnosis, 606 will do the rest.' Now, as a matter of fact, the diagnosis of this disease is often an extremely difficult one, and there are at least twenty-five different procedures which may be helpful in establishing a correct diagnosis. Of these procedures there are very few which, taken singly, will absolutely establish a diagnosis. These will be dealt with later. There exists at present no comprehensive outline for the diagnosis of syphilis. Stokes has published a brief schedule, extremely valuable and suggestive, but it has not yet been developed in print."

FECAL FLORA OF INFANTS AND CHILDREN

Davison, Wilburt C., and Rosenthal, L. V.: "A Bacteriological Study of the Fecal Flora of Infants and Children." American Journal, Diseases of Children, September, 1921.

The authors studied the fecal flora of seventy-five infants, sixty-one of the children being in normal health and fourteen suffering from intestinal disturbance.

The conclusion reached was that there is a lack of etiologic association of nutritional diseases with a putrefactive intestinal flora. This flora is found in the stools of normal children and calls for no change of diet.

The aerobic spore bearers, the anaerobic spore bearers and particularly the gas bacillus, B. welchii, were shown to have no etiologic relationship to intestinal disturbances in spite of many statements to the contrary. B. proteus and B. pyocyaneus in like manner have been acquitted.

All organisms capable of producing the putrefactive stool have been reported as existing in the excreta of normal children. On the other hand, the Flexner and Shiga bicilli are directly responsible for infectious dysentery.

The putrefactive flora is increased in the stools of children suffering from dysentery, but this increase is a result rather than a cause of the disturbance. The influence of diet on the incidence of putrefactive flora is not striking.

COELIAC DISEASE

Cantley, Edmund: "Coeliac Disease." Archives Pedeatrics, March, 1921.

The author in an entirely academic manner describes a symptom complex denominated by English authors as "Coeliac Disease."

It occurs mostly in children from two to five years of age and is more frequent in females than males. It is chiefly characterized by persistent looseness of the bowels, not watery in character but of the consistence of oatmeal gruel. The stools are light in color, probably due to acholia, foul in odor, frothy and of striking abundance. The child is pale, apathetic and emaciated, though the face may remain plump and the belly large. There is marked retardation in growth, weakness and general debility. It is an affection essentially chronic and runs a course of months or even years. No immediate or predisposing cause has been determined, but the symptom-complex seems to be deficiency of biliary secretions and a marked inability to digest and absorb fats. No constant pathology attends the affection. Medical treatment is unsatisfactory and symptomatic, and the dietetic management seems to be mostly in the avoidance of fats, and especially of cream.

On the whole "Coeliac Disease" seems to present few if any phases not exhibited by the average case of fat indigestion of childhood.

GREAT INTEREST SHOWN IN SOUTHERN MEDICAL ASSOCIATION SPECIAL TRAIN FROM ATLANTA.

Numerous inquiries are being received by Dr. Allen H. Bunce, Secretary Medical Association of Georgia, and Mr. Pat B. Hampton, D. P. A., Seaboard Air Line Railway, regarding the special train which will be operated by the Medical Association of Georgia, to Hot Springs, Ark., account the meeting there November 14th to 17th, as announced in previous issue of this Journal. This train, which will consist of all-steel Pullman drawing room sleeping cars, compartment cars and dining car, will leave Atlanta via the Seaboard Air Line Railway at 5:30 p. m., Saturday, November 12th, going via Birmingham, Frisco Railroad to Memphis, thence Rock Island Railroad to Hot Springs, arriving there Sunday afternoon, November 13th.

SPECIAL REDUCED RAILROAD RATES.

The railroads have named a rate of one-and-one-half fare for the round trip, for our meeting, tickets to be sold November 10th to 16th, inclusive, with return limit of November 21st. In order to secure this rate, you must have identification certificate to present to ticket agent. You can secure these certificates from your local secretary, or from the Southern Medical Association office at Birmingham. Be sure to apply for your certificate early, so as to avoid confusion at the last minute.

As previously stated, all the physicians of the Southeastern States, together with their families, who anticipate attending this meeting, are cordially invited by the Medical Association of Georgia to join them on their special train. Requests for information or Pullman reservations should be addressed to Mr. Pat B. Hampton, District Passenger Agent, Seaboard Air Line Railway, Atlanta, Ga., or Dr. Allen H. Bunce, Secretary Medical Association of Georgia, Healy Building, Atlanta, Ga.

PUBLISHER'S NOTES

THE MODERN METHOD OF FEEDING INFANTS.

Modern infant feeding calls for a formula suited to the individual requirements of the individual baby. The physician now realizes that an infant deprived of breast milk must be fed as an individual. The nourishment from the infant's food is principally derived

from cow's milk. The "foods" contain no mysterious life-giving elements, but are used as modifiers. As such they are indispensable for their carboyhydrate content, the added carbohydrate being necessary to make up for the loss of carbohydrate when cow's milk is diluted with water. It is also important that these "foods" are given as carbohydrates and should not contain a mixture of vegetable protein and fat, since the cow's milk supplies animal protein and fat in proportion suitable for the growth of most babies.

Infant feeding should be directly under the control of the physician. Realizing this important fact, Mead Johnson & Company, of Evansville, Indiana, have manufactured a line of infant diet materials suitable for the individual requirements of the individual baby. These products do not carry laity directions on the trade packages. Such directions on a package of food is the unsurmountable wall that differentiates between individual infant feeding and indiscriminate infant feeding. The physician may prescribe Mead's products with perfect confidence.

Mead's line of infant diet materials consists of Mead's dextri-maltose (dextrins and maltose), barley flour, dry malt soup stock, casec (calcium caseinate, for preparing protein milk), arrowroot flour and cerena, all of which are supplied without any directions on the packages. Over and beyond the gratifying results obtained from Mead's products, the physician is given unlimited scope to his own creative talents, hence there will be a greater number of better babies in his immediate neighborhood. The mother who uses Mead's Diet Materials at the direction of her physician is disposed to place credit for the welfare of her baby where credit belongs, i. e., to the doctor. The Mead Johnson policy means the realization of an ethical ideal.

Interesting publications on infant feeding, prepared by Mead Johnson Company, are well worth writing for. Letters addressed to them will receive personal attention from their scientific department.

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ORIGINAL ARTICLES

SIMPLIFIED INFANT FEEDING.*

F. C. Moor, M. D.,
Tallahassee, Fla.

If there is any one branch of medicine in which the general practitioner should be a near specialist, it is pediatrics. There is no other class of patients whose well-being can be so greatly improved, whose ailments can be so readily alleviated and whose lives can be so often actually saved, by proper medical care and supervision. There is no other class of patients, concerning whom the family physician is more often consulted, and whose careful study will pay a higher return in professional success.

In our own state, pediatrics should have an especial interest for every general practitioner, because, owing to our large area and sparse population, there are very few cities of sufficient size to support limited specialists, and the actual routine work of caring for the infants and children devolves almost entirely upon the family physician.

If, however, the family physician takes advantage of this opportunity, there is no one who can give more real service to his patients or reflect more credit on the profession. His opportunity begins in prenatal care during the period of gestation, and while serving as obstetrician, he can give the mother definite instructions concerning the future care of the baby with especial attention to nursing habits. It is at this time that the physician can and should impress upon the mother the fact that any disturbance of the baby's digestion is a matter for serious consideration and should not be left to haphazard methods of treatment.

Self-confidence in his own knowledge of the subject will do much to convince the mother of his interest in the baby's welfare and of his ability to take care of any of the many disturbances of infancy that may be forthcoming.

The presumption is that an effort will be made to maintain breast feeding in all cases, and auxiliary feedings, or weaning, resorted to only after convincing evidence that the milk supply is insufficient in quantity, or of such quality as to materially overtax the food toleration of the baby. Therefore, the first instruction to the mother should specify that nursings be at regular three-hour intervals, from 6 a. m. to 9 p. m., with an additional night nursing during the first three or four months. It is seldom wise to shorten the nursing interval to less than three hours. The nursing hours should be regularly maintained, waking the baby when necessary.

Next in importance is to impress the necessity of keeping a regular weekly weight record. This routine is so simple that in the normal healthy baby it is difficult to maintain, frequently, because the physician himself fails to realize the value of such a record as a part of the clinical history, when a digestive disturbance does occur.

The healthy baby should gain six to eight ounces per week for the first three or four months and slightly less than this during the balance of the year. Failure to gain during a period of two weeks, or an actual loss, is sufficient evidence that something is wrong, whether there be any other symptoms or not. This fact alone should impress both physician and mother with the real importance of keeping an accurate record. It is advisable that the weight be taken at the bath hour on the same day of each week.

With definite knowledge concerning the previous weekly weight, accurate data as to length of the nursing interval and duration of the nursing period, and a history of the

*Read in the Pediatric Section at the forty-eighth annual meeting of the Florida Medical Association, held at Pensacola, May 10, 11, 1921.

past and present digestive function, the physician should be able to arrive at an opinion as to the cause of the trouble and give worth-while advice for its correction. If any material factor of the group is missing, he is necessarily in doubt.

The one indication for modifying or discontinuing the nursing is failure to gain in weight, with or without marked digestive disturbance.

The most common acute disturbance of the breast-fed infant is due to overfeeding, and is characterized by an acute onset of vomiting and diarrhea (the so-called dyspepsia under the Finklestein classification). The weight record in these cases usually shows that there has been a very rapid gain in weight during the past weeks, and the condition is easily corrected by twelve hours' starvation followed by a material reduction in the daily amount of food given.

Of the more or less chronic disturbances the two most common are failure to gain due to lack of sufficient milk or to a relatively low toleration for the fats of the mother's milk. These two conditions may be easily confused and for differentiation will require a careful study of the entire clinical history, thorough examination of stool and accurate weighings before and after nursings. In either condition partial or complete weaning may be necessary.

When we take up the problem of artificial feeding, the great fact to be realized is that, while disturbances of the digestive system are usually caused by food, they are likewise prevented or corrected by food. In other words, proper feeding constitutes practically the entire therapy in these cases.

It, therefore, behooves the physician to know in detail the elements of the baby's feeding formula just as he knows, or should know, the drugs which he prescribes. When he orders a proprietary food without definite knowledge of the elements which compose it and their effect upon the infant's digestive tract, he is just as much to be censured as when he orders a proprietary medicine without knowing its drug ingredients or its effect upon the patient.

It is necessary then that the doctor who hopes to give scientific consideration of feeding cases should know his feeding therapy, which includes the caloric value of all food elements commonly used, and the normal needs of the baby at any given age and weight, just as he should know the physiological effect of a drug and its average dosage. It is further necessary that he train himself to think in terms of food units rather than in terms of grams or ounces.

This knowledge constitutes the basic principles of all infant feeding.

The application of these principles to any given case must necessarily be left to the judgment and discretion of the physician, but certain averages for normal-health infants may be safely given.

The normal infant under three months of age requires from forty-five to fifty-five calories of food per pound per day. After the third month this may be reduced to forty or forty-five per pound per day. The protein necessary for growth and for replacing tissue waste is contained in one and one-half ounce of milk per pound per day. The amount of food to be given at each feeding may be estimated at one ounce more than the age of the baby figured in months. However, this amount need never exceed eight ounces and some reduction may be necessary when the infant is decidedly small for its age; the real test being the infant's toleration for the amount given. On cow's milk mixtures the baby's stomach should empty itself in from three to three and a half hours. With this guide we can put the feeding interval at from three and a half to four hours.

With this data the feeding formula for any given case may be worked out without recourse to percentage table. For instance, a normal baby aged four months and weighing twelve pounds will need five hundred and forty calories of food per day (forty-five times twelve), of which eighteen ounces (one

and a half times twelve) of milk will be needed to furnish the necessary protein. The milk at twenty calories per ounce will furnish three hundred sixty calories, leaving a hundred and eighty calories to be made up by the addition of carbohydrate. All sugars run a hundred and twenty calories per ounce. The addition then of one and one-half ounces of malt sugar will supply the deficiency. There will be five or, at most, six feedings in the twenty-four hours, and five ounces (four plus one) at each feeding, making a total of twenty-five ounces, eighteen of which will be milk, one and a half malt sugar and the balance water. It will be found that the total caloric needs of the baby are materially reduced during the hot months, and that the infant's toleration for sugar especially is also below the average during this period; it has been the author's custom to reduce the sugar to not exceeding one ounce during the summer.

In infants over four months of age a part of the carbohydrate element may be furnished in the form of the various cereal dilutions, using barley flour or the wheat-flour ball.

The question of the milk supply is one which the physician will have to settle for each individual case. In the cities certified milk is usually available, and in the rural districts and the smaller towns it is not difficult to obtain a pure milk, but it is needless to say that this question must be taken up by the physician and detailed instructions given concerning its source and care, and unless the product is entirely beyond suspicion, that only boiled milk be used. In any case boiling the milk for at least three minutes will aid materially in those cases where there is a difficulty to digest the protein element.

In dealing with the baby who is already the subject of a digestive disturbance, the toleration for some or all of the food elements is much reduced, and the success of any treatment will depend on finding some food combination that will be tolerated in sufficient amount to maintain life. The question of growth and gain in weight must be, for the time being, subsidized to the problem of building up food toleration, for in these cases, just as in diabetics, it is possible to so restrict and regulate the diet that in the course of days, weeks or perhaps months a formula can be reached which will furnish the necessary caloric requirements for growth.

In considering formulas for these cases it is to be kept in mind that the protein present in boiled cow's milk is perhaps the least apt to tax the food toleration of the infant and may be in some measure utilized to make up for the deficiency in fats and sugars. It is further to be kept in mind that fats and sugars may be used as substitutes for each other and that often an infant may tolerate enough of one to compensate for any necessary reduction in the other.

It will be obviously impossible to consider within the time limit at our disposal the many variations in the infant dietary to meet various pathological conditions, but it is the earnest wish of the author that all general practitioners make a real study of the problems which are daily confronting the pediatrician, and this brief paper is presented more with a view to interesting you in the subject than to bring out any original ideas. It may be stated, however, that the outlines and feeding principles just given are essentially practical and will give a simple basis for working out almost any formula.

In conclusion, we would like to call your attention to the fact that progress in practical pediatrics, and especially in infant feeding, has done more in the past ten years to lower the mortality record of the United States than any other one thing in medicine, and you can be assured that when all general practitioners give the subject the consideration which it deserves this excellent record will be again materially improved.

DISCUSSION.

Dr. James D. Love (Jacksonville): In the first place I wish to congratulate Dr. Moor that he has not attempted to outline any

arbitrary system of infant feeding. Happily, we have gotten away from that a long time ago, and we know that there is no system applicable to all babies and especially to the difficult feeding cases. We know that any system of feeding, in order to be successful, must be adapted to the individual baby's need, and its individual capacity for handling the different food elements which enter into the different food compositions of the various formulas. It is supplying the need of the individual infant which marks the work of the pediatrician as being superior to the work of the general practitioner. Dr. Moor, however, is essentially correct in giving to us certain abstract principles from which we can proceed. These abstract principles, naturally, are to be deviated from when we have to deal with the symptoms of the individual infant. This applies even to the caloric needs of the child. The average baby three months old needs forty to fifty calories per pound weight. We have many children three months of age, weighing twelve pounds, who need more than that, a great many who will need less, and we are to bear in mind that the caloric needs of the child are not to be determined by its weight or age, but very largely by the capacity of the child for handling and assimilating food, and to a large extent its caloric needs depend upon the skin-surface area presented.

There are many atrophic infants of three months of age, weighing eight pounds, who present to the atmosphere the same skin-surface area as the child of the same age weighing fifteen pounds. This atrophic child needs as much food as the child who weighs more; so we are not to be guided by the age of the child nor the weight of the child nor altogether by the capacity of the child for handling food, but we must also consider the skin-surface area of the child.

I am glad Dr. Moor brought out the necessity for the use of boiled milk. Certainly I think the necessity for boiling milk for children under the age of one year has been clearly demonstrated. It has been conclusively proven that boiling does not interfere with the nutritive value of milk in the least; rather it renders it more digestible and it destroys bacteria and pathogenic influences which might do much harm.

It does not destroy the viable quality of the milk provided; further, when boiled, it is consumed by the baby within a reasonable time after the boiling process.

I see no reason why milk should not be boiled and fed to children under one year of age. The question is frequently asked, is it necessary to boil it after the child is one year old. I merely ask: "Why should it not be?" There are a great many reasons which occur to me why it should be boiled and no reason why it should not be boiled not more than three minutes. And I always make the suggestion to nurses or mothers not to remove or destroy the scum that accumulates on top of the milk in the boiling process, for that is the coagulated lac albumin which is easily digested and is more valuable than any other of the milk constituents.

I would like to take this occasion to comment upon the subject of the excessive amount of carbohydrates advocated by certain proprietary establishments. In this climate babies as a general rule cannot take the large quantities of food such as they recommend. My remarks concerning carbohydrates refer to other food constituents as well; we all know that babies in the South can not take the large quantities of food that babies reared further north are able to handle.

Dr. Wm. E. Ross (Jacksonville): I think the general subject of Dr. Moor's paper is such as to incite the interest of the general practitioner in the special care of infants' needs in the first year. One of the points which it appeared to me that he desired to stress was that the baby should not be taken off the breast. In my opinion, this is one of the most vital matters with which we have to deal. A great many babies are taken off the breast for conditions which can be easily rectified in a majority of cases. One of the

ways in which it can be most easily rectified is in the lengthening of the hours of the feeding periods.

Dr. Moor brought out the fact that milk stays in the stomach of the infant from three to three and a half hours, and he spoke of the necessary rest period after digestion. I should like to stress the point of four-hour feedings which would give time for digestion and give the necessary rest period. If you feed the three-hour schedule you will find babies that still retain the fat content in their stomachs; it does not give the milk food a fair chance to digest.

In my experience with babies I started out feeding the two-hour schedule; I then jumped to the three-hour schedule, and after a few trials of that I adopted the four-hour schedule, and I found to my great satisfaction that the four-hour feeding schedule for babies is by far the most satisfactory of any I have ever undertaken.

Another reason why so many babies are taken off the breast is that there is an excess of cream in the mother's milk over what the baby can handle. I have found that nursing from one breast and then from the other at the same time, at four-hour intervals, will prevent the necessity of many babies being taken from the breast. I think if you will try that you will find that it works very satisfactorily.

The subject of what the baby can be put on afterwards is handled very ably by Dr. Moor. All pediatricians believe in a proper modification of cow's milk, and when properly modified provides a food without too much cream which will be more readily assimilated than other foods.

As to the advisability of boiling the milk—some pediatricans advise boiling, some do not; it is largely a matter of opinion. As a general thing and with moderately healthy digestive powers, I see no reason why the baby should have boiled milk.

Dr. Freeman: On the subject of taking the baby from the breast—a few times I have been able to remedy that and prevent it by finding out what the trouble was with the mother. At one time, last September, I delivered a baby that weighed eleven pounds, the largest I have ever delivered, but the mother moved out of my neighborhood when the baby was three weeks old, and was not under my observation again until it was about six weeks old. At the time I had last seen it it seemed to be doing very nicely, but when I was called to see it out in the woods about eleven or twelve miles where the family had moved, it was in a very bad condition. I asked the mother what the trouble was; she said the baby had bowel trouble. It had gone down to skin and bones—looked like those little starved children, whose pictures we have seen. It seemed to be getting sufficient milk, so I went into the history of the case and the history of the mother. I found that she had had other children by a former marriage; that she had been infected and had been given three doses of salvarsan. The mother and baby both recovered. I started the baby on iodine.

Another mother, with her first baby—the milk never developed, there was just a small issue for three or four days, by the sixth day there was nothing there.

I thought the baby a little anemic; seemed to be constipated. She said: "Doctor, that is making so much milk I think I will have to leave it off." So I tried it on this other baby, with success.

Now I would like to ask Dr. Moor what he uses to prevent constipation in connection with boiled milk. Some babies will be constipated whether the milk is used boiled or raw, but I believe it is more apt to occur with boiled milk. I would like to know what he uses to counteract constipation.

Dr. F. C. Moor, Tallahassee (closing): Of course, you members realize that in the scope of a paper of this character it is absolutely impossible to go into the treatment of various disturbances of digestion.

My object in presenting a paper was, primarily, to arouse the interest of the gen-

eral practitioner. I want to impress upon the members the importance of infant feeding and that we should get away from the custom, which is more or less prevalent with physicians, of leaving it to the grandmother or mother or nurse to say as to what the baby shall have and when he shall have it, and when the baby is to be weaned, which is, I think, almost invariably decided by the family without consulting the doctor, the doctor being notified of the fact only when the baby is upset and the doctor's services are required.

I think physicians are largely responsible for the family taking it upon themselves to wean a baby without medical advice, because if the profession impressed upon the family the seriousness of the matter of weaning they would consult him before making the decision.

With the conclusions of Dr. Love and Dr. Ross I heartily agree, except in one or two points, and the more I deal with the problem, the more commonly I use boiled milk.

As to the feeding intervals when using cow's milk I direct that the intervals be three and a half or four hours, preferably four hours. With breast-fed babies, I think probably the normal baby would do just as well with three-hour feeding intervals. In the case of indigestion, longer intervals are absolutely necessary.

In regard to the constipating effect of boiled milk, suggested by Dr. Freeman, I do not know that I have found milk any more constipating when boiled than when it was not boiled; in fact, I do not think I have. Some babies are going to be constipated anyway. That is due to many causes and in breast-fed babies is seldom serious.

In bottle-fed babies, where constipation exists, I think it can be frequently corrected by increasing the malt sugar or using malt sugar if it has not been done.

We know that malt sugar is laxative, and I think it can be used to correct constipation.

THE FAILING HEART.

By Stewart R. Roberts, M. D.,
Atlanta, Ga.

Heart disease is an increasing problem because it is an increasing cause of death. Rejections for heart disease in the war were 42.3 per thousand, or 4.25 per cent, *i. e.*, 200,000 men among five million had organic heart disease. In one insurance company, from 1915 to 1918, the rejection rate was 24.4 per thousand, and men with known heart disease rarely apply for insurance. School children average 1.6 per cent of organic heart disease. About one-eighth of all deaths of all ages and one-fifth of all deaths over forty are due to heart disease. In the registration area for 1917 heart disease ranked all causes of death, with pulmonary tuberculosis a poor second—128,719 to 93,290. The heart is one of the single organs of the body. It will stand abuse and disease for years before it rebels, but by reason of its impaired function it may become a failing heart.

A failing heart is one that can no longer support, easily and without symptoms, an individual in comfort at the particular level of life at which he attempts to live (Cohn). Each heart has an exertion area and a limitation of effort, best represented by a circle. As the heart fails, the exertion area decreases and the circle becomes smaller. The limitation of effort is more quickly reached as represented by the decrease in the radius of the circle, and finally comfort may be had only in bed. The last stage is when the failure is so extreme that discomfort is present in the bedridden patient. There is acute heart failure as represented by the anginal deaths, acute dilatation, shocking failure from sudden overstrain. There is chronic failure as represented by the increasing discomfort and more frequent and persistent symptoms in mitral stenosis, aortic disease and myocardial insufficiency. Indeed, the condition of the cardiac muscle is the key to cardiac

pathology, and the symptoms of failing heart of a chronic nature are included in the diagnostic phrase which implies lessened functional power—myocardial insufficiency.

Let us clearly distinguish between heart disease and a failing heart. A mitral lesion, even mitral stenosis, may exist for years without symptoms, because the heart muscle is good. A mitral incompetency or an aortic stenosis cannot be cured, but what matter if the heart muscle does its work and can be taken care of? Consequently the keynote in the treatment of the failing heart is the care of the heart muscle. If the heart muscle does its work, even though there be valvular disease or an arrhythmia-like paroxysmal tachcardia or premature contractions, there is evidence of a relatively good heart muscle. On the other hand, with no arrhythmia or valvular disease, narrowing of the coronaries, through which must pass the blood to nourish the muscle, may result in myocardial weakness and increasing symptoms of failure.

The first and foremost symptoms of heart failure, in order of appearance and frequency, are shortness of breath, exhaustion and precordial pain; next come cyanosis, edema and passive congestion of the viscera, as the liver, lungs and spleen. Diagnosis remembers that these symptoms may arise from diseases other than cardiac failure, and diagnosis demands that the pathology be localized. One case at autopsy that during life had been treated for heart failure showed small fibrosed kidneys with an hypertrophied but good heart, and Wiel reports a case diagnosed and treated for heart disease and failure that had a gastric cancer as the cause of the symptoms and death.

Up to thirty years of age and often beyond, the great cause of cardiac conditions and diseases that result in failure are the non-syphilitic infections, represented chiefly by the rheumatic group, specifically tonsillitis, endocarditis, acute rheumatic fever, chorea and, less commonly, scarlet fever. One little girl of ten had chronic tonsillitis, chorea, active endocarditis with mitral valve insufficiency and acute rheumatic fever. Rest and tonsillectomy cured all but the damaged valves and the mitral murmur. In this large group the problem is chiefly preventive—the early and thorough removal of infected tonsils. I have yet to see a case of chorea in a child in whom the tonsils have been removed a reasonable time. The convalescent abnormalities of the postdiphtheritic heart, 15% of whom are high-grade heart blocks and usually fatal, are greatly prevented by the early administration of diphtheria antitoxin.

Between thirty and fifty years symptoms of a failing heart, particularly if there be no renal disease, and with history or evidence of any endocarditis or mitral valve damage, always should raise the question of syphilis. Here hypertension, a tympanitic and slapping aortic closure, the wet sheet sound, large and leathery radials, secondary anemia, palpable nodes and a history of a wild-oat period with or without a positive Wassermann, demand often a therapeutic test and treatment, best with mercury and iodides. In tertiary syphilis involving the circulatory system, while repeated doses of salvarsan may be in order, we have better results with biniodide of mercury and potassium iodide in doses once daily over a long period.

After fifty, symptoms of a failing heart are usually from a degenerative pathology, arteriosclerosis, myocardial change and hypertension, and here the force of time, toil, tension and toxins begin to tell. A druggist of fifty-nine, no exercise, no vacation, a daily drink, bromides for sleep, long hours of work, developed a failing heart, passive congestion of liver and lungs and a dilated aorta. His pathology was the result of unwise living. Anno Domini and the toxins claim their physical changes. We are living in the age of noise and lights; the result is lessened sleep and nerves; the myocardium bears the brunt of the wear.

1. The failing heart forces itself to the attention of the patient by the subjective symp-

toms of dyspnoea, exhaustion and myocardial pain. These are nature's warnings from an overstrained heart and necessitates a lower level of activities, longer hours in bed and the elimination of poisons.

2. No cardiac improves unless he sleeps. Sodium or ammonium bromide in bedtime doses of thirty to sixty grains and subsequent reduction after sleep is established. One purpose, one drug, one result.

3. No cardiac improves unless he is comfortable. There is no more struggling patient and one getting worse more rapidly than the dyspneic and orthopneic cardiac who pants for breath, loses sleep, spends miserable days and more miserable nights. His failing heart fails because it is working so hard to give him breath. Morphia, grs. 1-8 to 1-4, once to thrice daily until breathing is easier, or deod. tr. opii, gtts. five to twenty, are in order. To be comfortable is good treatment.

4. Cyanosis, edema, cardiac asthma and passive congestion are objective signs of advanced failure that demand rest in the position most comfortable to the patient. Complete rest in bed is the most noted aid. The guide to improvement is the increased comfort of the patient, and the decrease in his pulse rate.

5. Digitalis in myocardial insufficiency is the chief drug and needs to be given by itself for results, and not by mere rule. Digitalis produces a slowing of the pulse, even to the bigeminal pulse, improved breathing, increased strength and comfort, lessened edema and increased diuresis, and finally nausea and vomiting. Too little digitalis is a common error. A good tincture in good dosage to results and then decrease enough to keep up comfort is a good rule. Thirty to sixty drops thrice daily, and as the pulse slows and improvement begins, decrease to twenty to five drops daily. We get the good results with digitalis leaves in capsule form, one grain to the capsule.

6. Edema from the failing heart means dilatation of the heart, decreased cardiac power, oncoming passive congestion. A decreased fluid intake and an increased urinary output is necessary. If the edema is cardiac in origin, digitalis will prove a good diuretic. Theophyllin three grains or theobromine sodiosalicylate are good aids. Christian believes the intermittent use of diuretics gives the best results. The old Basham's mixture or potassium salts are practically valueless. Gentle catharsis is needed, but not daily large doses of Epsom salts. Such fierce catharsis would weaken a well man.

7. Cardiac asthma demands rest, opium, digitalis. Pulmonary edema demands opium, atropine, or even adrenalin in danger.

8. Diet should be light, chewed well and digestible. Liquids should be restricted at mealtime, and until edema disappears.

9. Relapses are too often inevitable. The returning cardiac is an old story. Often he returns to the same hospital many times for rest, digitalis and comfort. The return to activity is the danger. The circle of activity must be made very small. Shortness of breath on exertion means stop and rest and do less. Short rules impress the patient if he be taken into full pathological confidence. Avoid stairs, the broom, alcohol, tobacco and overeating. Sidetrack into easy living. Quit pushing and begin to saunter along. We can do so much so easily if the patient only gets the reason and the mental outlook, and he usually obeys and co-operates for the sake of comfort and results.

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MINIMUM STANDARDS OF NURSES' TRAINING SCHOOLS.*

LILLIAN A. HOLLOHAN, R. N.,
President State Nurses' Association,
Clearwater, Fla.

The year 1913 found Florida with very few graduate nurses. About this time the tourist nurses began to find Florida a good field, and as we had no laws in regard to the practice of nursing, it invited all kinds and classes.

A few of the nurses got together to find a remedy to protect the public and the profession from the fakes that took advantage of the situation, and, with the help of Governor Park Trammell, a bill was put through the legislature of that year which he hoped would remedy that evil. Owing to the very weak law and the low educational standard of our hospitals at that time, it seemed for a period of time that no good was to be derived. However, it proved a foundation, and as our more advanced states led, we followed.

In June, 1918, the Florida State Examining Board realized the fact that they could make no progress without new legislation and Florida nurses' or training schools would not be recognized by the American Association of Nurses, which together with the Educational League and National Public Health Association set the standards for the nursing world of America, and this meant that the nurses trained in this state would not receive recognition as registered nurses outside of the state of Florida.

The State Board invited the president and executive board of the Florida State Association to meet with them to formulate a bill that would be best suited to Florida. After two years' study of the laws of each of the forty-five states, it was decided that the laws of Kentucky seemed the best suited to our needs.

They submitted our proposed bill to the chairman of the legislative committee and other members of the American Nurses' Association, asking for their opinion. Having been told that they thought the bill very good and that nine other states were trying to get practically the same, we thought it safe to give it a trial. At the session of the legislature of 1919 the bill was passed and became a law. The following results have been accomplished:

THE BENEFIT TO THE PUPIL NURSE.

It makes qualifications for the pupil nurse. It makes requirements of the schools, namely, a competent instructor and proper course of studies, hours of rest and recreation sufficient to guard her health, comfortable and sanitary living quarters. It furnishes a training school inspector whose duty it is to see that these requirements are carried out. It provides for registration of the schools that come to these requirements in our own state. It means that the accredited or registered schools of the state are recognized by the National Association, thereby making our graduate eligible for Red Cross or government positions in the United States army. It is a guarantee to the public and physicians that our graduate nurses are fully competent to assume responsibility put upon them.

THE BENEFIT TO THE SUPERINTENDENT AND BOARD OF DIRECTORS.

The training school inspector, giving full time to the study and advancement in the science of nursing and training schools, is often called upon to help solve the many knotty problems of both superintendent and board of directors, who, as we all know, are often made up of very busy men and women who have little time to really inform themselves on these subjects.

The wonderful cooperation and cordial welcome that our inspector has been receiving throughout the state approves of the wisdom and appreciation of the work.

WHAT REGISTRATION DOES FOR THE GRADUATE NURSE.

When an applicant from one of our accredited schools, and no others are allowed to take the examination, it gives her a standing, it means that she has met the requirements that the wisest and best leaders in the

*Read before the Florida Midland Medical Society, at Orlando, October, 1920.

nursing world have made, after years of study and work, thereby giving her a prestige that she may be proud of. It is an assurance to the public that this woman is what she claims to be and is worthy the trust that they are forced to put in her when she is called into their homes. And what is most important of all, it makes it possible for the physician to know just how much responsibility to put on a nurse, if she comes from a standardized school. He knows what the standard is, and her registration is a proof that she has met this standard. It also eliminates the opportunity for the fake who is lured to Florida by our climate and shortage of nurses to impose upon the physician and public.

PROPAGANDA FOR REFORM

More Truth About Saccharin.—It has been asserted that ingestion of saccharin increases the catalase content of the blood; that catalase increases oxidation in the animal organism, and hence that the use of saccharin by diabetics might be of value. However, the alleged content of catalase remains improbable and unproved. Further, recent investigations show that administration of saccharin, even in huge amounts, does not increase oxidation in the animal body. Saccharin is neither a food nor a potent drug. Its usefulness in dietotherapy is limited to the function of taste. (*Jour. A. M. A.*, November 13, 1920, p. 1347.)

Some of Loeser's Intravenous Solutions. — The Council on Pharmacy and Chemistry reports that Loeser's Intravenous Solutions of Hexamethylenamin, Loeser's Intravenous Solution of Hexamethylenamin and Sodium Iodid, Loeser's Intravenous Solution of Sodium Salicylate, Loeser's Intravenous Solution of Salicylate and Iodid, Loeser's Intravenous Solution of Sodium Iodid and Loeser's Intravenous Solution of Mercury Bichlorid, manufactured by the New York Intravenous Laboratory, were not accepted for New and Nonofficial Remedies because they are sold under misleading claims regarding their alleged safety and efficiency. The fundamental objection to the claims made for these preparations is the general claim of superiority and safety of the intravenous method. The Council continues to hold that intravenous medication generally is not as safe as oral medication, even with relatively harmless substances, and that it does not give "improved clinical results" except under rather narrowly confined circumstances, namely, if the drug undergoes decomposition in the alimentary tract, if it is not absorbed, if it causes serious direct local reactions, or if time is an urgent element. The Council has recognized intravenous preparations which satisfy these requirements. The Council concluded that these solutions did not meet these conditions. (*Jour. A. M. A.*, April 16, 1921, p. 1120.)

More Misbranded Nostrums.—The following preparations have been the subject of prosecution by the federal authorities charged with the enforcement of the Food and Drugs Act, chiefly because the therapeutic claims were held to be false and fraudulent: Antibrule (Crescent Chemical Co.), essentially a watery solution of picric acid and a small quantity of picrates. Burkhart's Vegetable Compound (Dr. W. S. Burkhart), consisting essentially of aloes, capsicum, and plant extractives, including resins, probably podophyllum. S. O. S. (Pfeiffer Manufacturing Co.), consisting of two preparations; one, a watery solution containing thymol, zinc, magnesium sulphates and glycerin; the other, pearls containing santal oil, copaiba balsam, oil of cinnamon and fixed oil. Osgood's Special Capsules (H. Planten & Son), consisting of volatile gurjun oil, a phenolic compound and a sulphurated fixed oil. Gin-berry Capsules (Henry S. Wampole Co.), composed essentially of cubebs, balsam of copaiba, santal oil, magnesia and alum. Menetol Vaginal Suppositories (Benetol Co.), consisting essentially of alpha and beta naphthol, boric acid and traces of menthol and phenol in a cacao butter base. Mowery's Gonorrhea Paste (Binkley Medicine Co.), essentially powdered cubebs, copaiba balsam, alum and magnesia. (*Jour. A. M. A.*, April 30, 1921, p. 1263.)

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THE SOUTHERN MEDICAL ASSOCIATION.

The fifteenth annual meeting of the Southern Medical Association will convene in Hot Springs, Arkansas, on November 14th, and remain in session through to November 17th.

The usual scientific treat is in store for all members who are fortunate enough to be able to cast aside the duties of the day and hie forth to "Arkansaw." The newly organized Section on Neurology and Psychiatry will meet on Monday morning, the 14th. The sections on Radiology, Urology, Orthopedic Surgery and Obstetrics will also hold sessions on the opening day. In addition to these section meetings, The Southern States Association of Railway Surgeons, The Southern Hospital Association, The Southern Gastro-Enterological Association, The American Society of Tropical Medicine will open their sessions. The annual meeting of the National Malaria Committee and the Conference on Medical Education will also take place on the 14th. From the opening to the close a full day's program is assured all whom attend regardless of what their special interests may be.

The Southern Medical Association has grown to become a wonderful organization; one can hardly be considered of "organized medicine" in the South if not a member of "The Southern." We urge those of our readers who have not already become affiliated to do so at once and if possible to attend the Hot Springs meeting. The excursion rate of one and a half fares for the round trip on the certificate plan, offered by all railroads, makes the trip in itself an attractive one.

A NECESSARY INNOVATION.

The JOURNAL for many years has regretted that the discussions of papers read before the State Association could not be made available for publication, realizing that points brought out in the discussion of a paper were often of great value and added much to interest the reader who might not have been

in attendance. The discussions of papers read before the association are for the most part snappy, of interest and deserve to be recorded. Funds to report our complete proceedings have not, however, been available until the Pensacola meeting.

We are, therefore, especially pleased to be able in this issue to publish the full discussion of Dr. F. C. Moor's paper, entitled "Simplified Infant Feeding," which will be found in another column.

THE BOARD OF MEDICAL EXAMINERS.

We publish in this issue the first report of the Board of Medical Examiners as they function under the recently enacted Stuart Bill. It is believed that this report and all subsequent reports of the Board will be of considerable interest to our readers.

REPORT OF THE STATE BOARD OF MEDICAL EXAMINERS.

The State Board of Medical Examiners conducted their first examination of candidates applying for licenses to practice medicine under the provisions of the recently enacted Stuart Bill, in Jacksonville, on August first and second. The class consisted of forty-three applicants, of whom thirty passed and thirteen failed. The following is a list of the grades made:

Passed.

School.	Year of Graduation.	Percentage.
Atlanta Medical College.	1892, 1916	78.8, 84.1
Bellevue Hospital Medical College	1889	77.7
Drake University College of Medicine	1912	80.2
Emory University School of Medicine	1916, 1921, 1921	82.1, 86.2, 84.1
	1921, 1921, 1921	88.4, 82.5, 90.0
Jefferson Medical College	1919	90.5
Kentucky School of Medicine	1882	75.2
Lincoln Memorial University	1916	86.0
Loyola University	1918	86.6
Medical College of South Carolina	1916	83.5
Miami Medical College.	1909	81.0
Rush Medical College	1904	75.0
St. Louis University School of Medicine	1919	89.9
Tuft's Medical College	1898	77.6
Tulane University	1917, 1919, 1921	89.0, 82.2, 86.5
University of Georgia	1921	86.1
University of Louisville.	1921	87.2
University of Maryland.	1914	79.3
University Medical College of New York	1883	79.2
University of Nashville.	1906	87.9
Vanderbilt University	1919, 1919	84.4, 94.0
Western Pennsylvania Medical School	1897	87.0

Failed.

School.	Year of Graduation.	Percentage.
Atlanta Medical College.	1915	70.7
Augusta Medical College	1891	59.8
Beaumont Medical College	1889	64.8
College of Physicians and Surgeons, Atlanta	1903	73.5
College of Physicians and Surgeons, Boston	1912	74.1
Georgia College of Eclectic Medicine and Surgery	1886	54.3
Tuft's Medical College .	1916	73.9
University of Louisville.	1901	72.8
University of Nashville.	1905	71.3
University of Tennessee.	1894	67.8
University of West Virginia	1877	63.7
Vanderbilt University	1913	68.7
Western Medical College, London, Ontario	1912	68.5

REVIEWS FROM CURRENT LITERATURE

TYPHOID-PARATYPHOID STRAINS

Krumwiede, Charles, and Noble, W. Carey: "On the Claim That Some Typhoid-Paratyphoid Strains Survive the Milk Pasteurization." The Journal of Infectious Diseases, Vol. 29, No. 3, Sept., 1921.

As some recent tests had been claimed to show that the heating of milk to 60° C. for 20 minutes failed to kill some of the organisms of the typhoid-paratyphoid group, the writers undertook a series of tests that most conclusively show that even 10 minutes at 60° kills all organisms used in the tests. To make sure that the former worker was not using more heat-resisting strains, these were obtained, and even as great an infection as was obtained by the use of the growth from 10 agar slants in 400 cc. of milk was tested by incubating the milk for 48 hours after pasteurization and then inoculating agar with .5 and 1 c.c. amounts.

No growth occurred on any of the plates

treated in this way, and they conclude that none of the organisms of the typhoid-paratyphoid group even in small numbers will survive heating to 60° for 20 minutes.

GOAT'S MILK

Calvin, James K.: "Goat's Milk." Archives of Pediatrics, Sept., 1921.

High authorities are recommending goat's milk as a food for infants, it being especially useful to those who desire a small quantity of milk and have not the room, or cannot afford to keep a cow. A great factor in favor of its employment being that it is available at all times. The goat can be milked as frequently as is desired, and refrigeration is not necessary.

The chemical composition of goat's milk corresponds, for practical purposes, with that of cow's milk. A goat produces twice as much milk in proportion to her weight as a cow. A year-old goat will produce from 300 to 700 quarts of milk a year. A good grade Toggenburg goat will produce from 3 to 6 quarts a day. From 6 to 8 goats can be kept upon the food required for one cow.

The goat is a much cleaner animal than the cow, and its milk is more free from bacterial contamination of all kinds, and never contains the bacillus of tuberculosis. In many instances, children who are unable to digest cow's milk for some reason will thrive on goat's milk. It is probably higher in anti-scorbutic properties than cow's milk. It is even possible that children drinking goat's milk may acquire thereby a passive immunity to tuberculosis through the transfer from the goat, to the child, of natural antibodies.

TREATMENT OF TONSILS AND ADENOIDS

Witherbee, W. D.: "X-Ray Treatment of Tonsils and Adenoids in Children." Archives of Pediatrics, Sept., 1921.

A marked advance in the treatment of rheumatism, endocarditis, pericarditis, and other conditions resulting from focal infections of the throat has followed upon development of X-ray therapy of tonsils and adenoids. According to the author, this method of treating infections of the throat is certainly a more effective one than that of surgical procedure. Since in rheumatism and endocarditis there is evidence of a general infection of the crypts and follicles not only of the tonsils, but of the entire mucus membrane of the throat, it is apparent that the mere removal of tonsils and adenoids is an insufficient process.

In chronically infected throats even lingual tonsils and a chain of lymphatics in the lateral wall extending up to the Eustachian tube contain numerous infected crypts. It is not practical to dissect out these individual crypts, but exposure to X-ray will destroy all infection of these isolated parts of the throat. The author reports one, of a series of thirty cases, in which a single exposure destroyed all bacteria in less than four weeks.

EPIDERMOPHYTES

Sabouraud, R.: "Certain Unclassified Epidermophytes of the Body and of the Hands." Urologic and Cutaneous Review, Vol. XXV, No. 8.

In this original article, Sabouraud, who is well known to the medical world as the first in the field of investigation of vegetable parasitic skin diseases, makes a plea for a more thorough cultural study of pityrtasis rubra. Clinically, this skin disease is very typical of a vegetable parasitic affection. In this country, the pale, pinkish, circular, slightly scaly patches of pityriasis rosea (same disease as pityriasis rubra of Gilbert), have always been tentatively considered as due to some parasite. In view of the advances in the etiology of the tricophytes and epidermophytes of the feet and hands, Sabouraud's timely article is of great value.

DERMATITIS

MacKee, George M., and Andrews, George C.: "Roentgen Dermatitis and Radium Dermatitis: A Comparison." Archives of Dermatology and Syphilology, Vol. No. 4, No. 2, p. 213.

The writers in this short article give some very timely information in regard to the results of the reactions of both radium and X-ray. They also call attention to the fact

that the dermatitis from radium is similar in character to that produced by the X-ray. The conclusions given are as follows:

"In conclusion, we repeat that there is no essential difference between the reaction provoked by radium and the reaction effected by roentgen rays. What little difference there is, is occasioned by the fact that very 'soft' beta radiation produces a more superficial 'burn' than do gamma rays or roentgen or long-wave length, and that the shortest gamma rays effect much deeper destruction with correspondingly less superficial destruction than do the shortest roentgen rays, under the usual working conditions. It is becoming the practice in Germany to use a 12-inch to 14-inch spark gap and a skin-taget distance of several feet when employing roentgen rays in deep therapy.

"It is possible that radiation of this kind may destroy tissue to as great a depth as very short gamma rays, as the latter are used in practice at the present writing.

"What we especially desire to emphasize is that no matter how radium is employed, if the quantity is sufficient, the results may be the same as those of roentgen rays. We have seen atrophy and telangiectasia follow a single erythema dose administered with an unscreened, flat radium applicator of the varnished type."

NEW AND NONOFFICIAL REMEDIES.

Pituglandol-Roche.—An aqueous solution containing the active constituents of the posterior lobe of the pituitary gland of cattle, free from preservatives. It is physiologically standardized on the isolated uterus of the virgin guinea-pig so that 1 c.c. respond in activity to 0.003 gm. betaiminazolylethylamine hydrochloride. For a discussion of the actions and uses see general article, Pituitary Gland, New and Nonofficial Remedies, 1921, p. 219. Pituglandol-Roche is marketed in ampules, each containing 1.1 cc. Hoffman LaRoche Chemical Works, New York.

Pollen Antigens-Lederle. — Liquids obtained by extracting the dried pollen of plants with a liquid consisting of 67 per cent glycerin and 33 per cent saturated solution of sodium chloride. For the actions and uses of pollen extract preparations, see New and Nonofficial Remedies, 1921, p. 239. Pollen antigens-Lederle are supplied in 15 pollen unit strengths. They are marketed as follows: Series A, containing five vials containing, respectively, 1.5, 3, 6, 12 and 15 pollen units. Series B, five vials containing 18, 30, 45, 60 and 90 pollen units. Series C, five vials containing, respectively, 150, 225, 300, 450 and 600 pollen units. Complete Series, containing the fifteen doses of Series A, B and C. Diagnostic Test, containing 0.01 c.c. of a dilution representing 60 pollen units.

Pollen Antigen-Lederle (Ragweed).—A liquid prepared by extracting the proteins from the pollen of the ragweed.

Pollen Antigen-Lederle (Timothy).—A liquid prepared by extracting the protein from the pollen of the timothy. The Lederle Antitoxin Laboratories, New York. (*Jour. A. M. A.*, June 18, 1921, p. 1753.)

Suprarenalin.—Vials containing 1 grain suprarenalin (see *Jour. A. M. A.*, May 14, 1921, p. 1353). Armour and Co., Chicago.

Suprarenalin Ointment. — An ointment containing 0.1 per cent suprarenalin (see *Jour. A. M. A.*, May 14, 1921, p. 1353), suspended in a petrolatum base. Armour and Co., Chicago. (*Jour. A. M. A.*, June 25, 1921, p. 1826).

Ittiolo is an ammonium sulphoichthyolate preparation, manufactured in Italy by the Societa Industrie Chimiche (Guiseppi W. Guidi, New York, agent). The A. M. A. Chemical Laboratory analyzed two specimens of Ittiolo and found that they differed in several particulars from the New and Nonofficial Remedies requirements for the product. The American agent for the product was informed of the results of this analysis. He was advised that Ittiolo would

be omitted from New and Nonofficial Remedies unless standards for it were received within a reasonable time which would correctly indicate its composition. At the expiration of three months the Council had received no assurance from the American agent that any effort was being made to standardize Ittiolo or to insure the uniformity of its composition. Accordingly the Council directed its omission from New and Nonofficial Remedies (Rep. Council Pharm. Chem., 1920, p. 64).

PUBLISHER'S NOTES

The effect of fruit juices in the mouth is now quite clearly understood. The common expression that a taste of orange or apple makes one's mouth water means that these mildly acidic fruit juices have the peculiar power to stimulate salivary flow.

More than that, it means that the saliva which responds to this stimulation is frequently more normal than was found in the same mouth during the pre-stimulated period. This is one of the chief reasons why fruit should form a part of each meal, why each meal should open and likewise close with fruit.

It produces a copious, fluid, alkaline saliva which is so essential in order that the oral cavity may function properly.

Latterly various investigators have found that dentifrices should be mildly acidic like fruit to assist nature in maintaining a normal saliva. They have, moreover, proven that alkaline mouth preparations are contraindicated in the mouth and should be abandoned because they oppose nature in maintaining normal oral secretions.

The most universally used acid dentifrice is Pepsodent. It is endorsed by many in the professions and used daily by millions because it stimulates salivary flow in a manner similar to fruit.

HIGH-POTENCY ANTITOXIN.

The reticence which formerly characterized the attitude of certain physicians toward the injection of large doses of antitoxin in cases of diphtheria has almost entirely disappeared. This, in no small measure, is attributable to the enterprise of biological manufacturers in developing new and improved methods of antitoxin production.

The diphtheria antitoxin put out by Parke, Davis & Co. is remarkable for its concentration and purity. The total solids in this product have been reduced to a minimum, thereby practically eliminating the possibility of anaphylactic reactions. The high concentration of this antitoxin makes feasible the injection of an adequate number of antitoxic units in small bulk—a most desirable quality, since the pain and discomfort resulting from the injection are negligible and, if given subcutaneously or intramuscularly, absorption is hastened.

NOVEL APPLICATIONS OF ADRENALIN IN THERAPEUTICS.

Two cases of acute and one of chronic nephritis were reported in Policlinico (Rome), April 16, by Borelli, who affirmed that considerable benefit was realized from treatment with Adrenalin. In one case, that of a child, 5 years of age, he gave one c.c. daily of the 1:1000 solution in divided doses of four drops at four-hour intervals. Eight-drop doses were administered in the other two cases, the patients being adults. Another Italian physician, Ercolani, called attention to the efficacy of Adrenalin in nephritis several years ago. He gave it by the mouth and noted the ease and efficiency of this plan of treatment of disease of the kidney, which Borelli seems to have confirmed.

Recently Demetre, of Paris (Bul. de la Societe Medicale des Hopitaux, March 11, 1921), announced that he had found the arterial tension to be exceptionally low in all

tabetic patients free from pronounced aortic disease. Treatment with Adrenalin relieved the asthenia and hypotension and arrested the gastric crises and lightning pains. He injects one c.c. of the 1:1000 solution of Adrenalin Chloride, repeating it the following day if necessary. His observations were based on fifteen cases.

The cure of gastralgia with Adrenalin has been reported from various sources, and Rohmer found that the crisis was arrested in four cases in 15 to 20 minutes, the effect continuing for several hours. Zanfrognini had equally satisfactory results from the use of Adrenalin administered by the mouth, and Marinesco a like effect in eight cases, in which however the drug was given by hypodermic injection.

Parke, Davis & Co., who are the makers of the original Adrenalin, upon the use of which most of the world's clinical work has been based, supply the 1:1000 solution in one-ounce vials for internal administration or the preparation of solutions. For hypodermic injection they furnish solutions of 1:1000, 1:2600 and 1:10,000 in sealed glass ampoules.

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ORIGINAL ARTICLES

"WATCHMAN! WHAT OF THE NIGHT?" THE WATCHMAN SAID, "THE MORNING COMETH. * *"

JOHN S. HELMS, M. D.,
Tampa, Fla.

Mr. Toastmaster, Guests, and Members of the Hillsborough County Medical Society:

This is indeed a pleasant occasion, as it makes its recurrence for the twentieth time for me. I see about me only a few faces that were here at the first banquet of this society that I attended. One by one they have answered the last call. This fact brings a feeling of sadness for the moment, but when I contemplate their goodness, their greatness, and their reward, my sadness is turned to joy at their happiness eternal.

Passing from the memory of those companions who have passed before us, let us consider the opportunities for those of us who remain, those who have come into our midst since, and those who are coming now. We are blessed in that we have the privilege to live now and enjoy the fruits of the labor of those gone before and our own labors for better professional conditions in our own city and county. Indeed, happy should we be and filled with enthusiasm, for the present reveals the fulfillment of the promises of the past, and the future holds for every honest and faithful one among us roseate promises of progress and prosperity.

Indeed, there has been no age in the recorded history of the world when the outlook has been so bright for the medical profession, and the profession is responding with a promptness and steadfastness of purpose never before evidenced. Many factors have been created and put into action for the betterment of the medical profession and those things that concern its work. The doctor's ability is better recognized by the public. Facilities for his better education have been provided and he has been awakened to a keener sense of his responsibility to the sick, to the public in general and, lastly, to himself. The doctor's ideals have been raised hand in hand with the advancement of his science and his art. He is more tolerant of his neighbor, he is less jealous. He is not only more tolerant but is really getting to be co-operative with his confreres rather than resentful for the success of his colleagues.

We see about us many helpful activities inspired and put into motion tending towards the betterment of the efficiency of the profession. These are born of the idealism of the profession which has been awakened anew. Among these activities we see betterment of teaching facilities and methods, together with a requirement for better preparation for study of medicine, so much so that the medical education of this country quite measures up to that of the leading nations of the world, a thing which we can only recently boast of.

The requirement for practical hospital experience is demanded and regulated so that the maximum benefit to the student may be obtained. This has led to hospital standardization and classification to determine the fitness of hospitals for giving such training to interns. A great consciousness of duty to the sick man in the hospital bed has been awakened. The American Medical Association, the American College of Surgeons, the American Hospital Association, and the Catholic Hospital Association are the four

*Read before the Hillsboro County Medical Society at Tampa, September, 1921.

great chief factors which, in a co-operative way, have taken up this great work. In the near future conditions will be intolerable for such institutions as are mere boarding houses for the sick, operating under the guise and name of a hospital. The "minimum standard" will soon have to be lived up to, for the public is being rapidly educated upon what a hospital and the medical profession ought to be, and will soon demand through our legislative bodies the reforms needed, unless we, as a profession, see the handwriting on the wall, and react in an idealistic way.

The time has come when group medicine, or hospital staff organization must be adopted, or some form of state medicine will be forced upon us by the will of the people expressed in law. The public is no longer ignorant of the fact that one head cannot hold all that is knowable in the great accumulated storehouse of the science and art of medicine. This same enlightenment of the public is destroying the hold and the influence of the pseudo-scientist, and the 'isms, and the 'pathies. The latest specialty of the newer science of medicine, the neuro-psychiatrist, is coming justly into his own. The doctor is becoming less a materialist and is realizing more and more the spiritual side of things.

In concluding, may I dare annunciate the hope that in the near future these great idealistic, yet practical and constructive movements, may take such hold in Tampa that we may soon see the whole medical profession brought into a harmonious, well-organized staff of specialists, grouped around our own city hospital with the "minimum standard" as its basis, for the betterment of the hospital, the betterment of the patient in its bed, and last, but not least, the betterment of the profession of our fair city. "Watchman! What of the night." The Watchman, said, "The morning cometh. * *" Truly the morning of opportunity for the medical profession cometh.

CYSTITIS IN WOMEN.*

L. Lambdin, M. D.,
St. Petersburg, Fla.

There is no more prevalent, distressing or contractable malady in the whole range of affections than cystitis. It is a subject that rarely ever comes up for discussion in medical societies. It seems that our appreciation of the difficulties and the limitations in the treatment combine to render our interest in the disease lukewarm.

Your essayist feels like apologizing for its introduction before this presence, especially as he has nothing new to offer; yet the extreme distress attending it so far exceeds the majority of conditions that enlist our interest in therapeutic and surgical endeavors, that a revision of some of the obstacles to its cure and invoices of our resources should be of the utmost moment. A perusal of the classical literature on the subject is a most ponderous undertaking, and the description of trivially ridiculous idiopathic causes, begetting a host of vaunted remedies, is disgusting and mystifying.

Sepsis, "the leaven which leavens the whole lump," is the key to etiology and treatment. The failure to appreciate the causative factorogeny of pus-producing germs; the rational methods for their extermination; and the correction of their depredation, is the entire solution to the misinterpreted etiology and unsatisfactory treatment in the hands of our predecessors. Hitherto the inflammatory and other ailments of the female urinary system have been illy understood and lagged in the wandering progress made in collateral branches of our art, particularly in the revised pathological conception and treatment of the associated organs. The most excessive changes in the diagnostic phase of these disorders have been wrought by the perfected cystoscopic methods devised and popularized by Prof. Howard A. Kelley. His labors have led to a more correct appreciation of the infective nature of the maladies,

*Read before the Florida Midland Medical Society, at Orlando, October, 1920.

together with the proper means and instruments for their detection and direct treatment; for long urinary diseases in the opposite sex have been endowed with the best efforts of general and special surgeons, but the corresponding class of diseases in women has been the stepchild to obstacles and "the ugly duckling" in gynecology.

The monumental labors of Kelley, supplanting methods of differentiation, have placed the keystone of accurate diagnosis to the arch of symptomatology and treatment built by Skene and Emmet.

While recognizing that the overwhelming majority of cases of inflammation of the bladder result from pyogenic micro-organisms protracted from without, the instrumentality of such causes as exposure to cold, retention and decomposition of urine, calculi, foreign bodies, neoplasms, tuberculosis, mechanical injuries, croupus and diphtheritic inflammations, and the secondary infection from rupture of an adjacent pus collection is unquestioned. Catheterization must end the impeached sponsor for the majority of this affection. The extension of septic urethritis, particularly gonorrheal, is another source of infection. It is the prevention of these two larger classes of causes that I desire to refer to especially. Unclean, rather than unnecessary catheterism, should be the subject of censure. I believe that more cases of obstetric practice should be catheterized and few cases in gynecologic surgery.

The over-distended bladder in parturient women, unsuspected by the patient and unnoticed by the nurse, should always be the object of closest scrutiny from the accoucheur. Do not wait for dribbling, but insist upon careful measurement and computation of the total daily amount of urine. Urination should be encouraged, even to allowing the woman to sit upon the bed-pan in normal cases, after the first few hours. In difficult cases, and where the patient is unable to pass her water, systematic clean withdrawal should be practiced.

In the postoperative cure for the gynecologic cases, I am especially anxious to encourage voluntary urination, by allowing hot water to trickle over the vulva, by vaginal irrigation, where there is no outside operation or gauze within, and this failing, by hot enema (unless there is sphincter repair). These methods faithfully employed are usually successful. I can commend enemeta as the most effective of all methods to encourage micturition.

These means failing, the method of catheterization is all important. I append the rules for preparing catheter and precaution necessary in passing it in use in the Woman's Hospital:

1st. Catheter to be boiled in boric acid solution four per cent for ten minutes.

2nd. Catheter to be brought to bedside in the vessel of solution in which it has been boiled.

3rd. Nurse to place patient in proper position for introduction of catheter.

4th. Prepare the parts by washing in bichloride solution 1-3000.

5th. Nurse to scrub hands with brush, soap and water for three minutes.

6th. Scrub hands with brush and bichloride 1-1000.

7th. Nurse not to touch anything after cleaning hands except catheter, great care being taken not to touch bed clothing or anything else with catheter before its introduction.

8th. This order of preparation, as suggested, must be followed.

These instructions are printed and placed in suitable places in each ward and also reproduced in the rules for nurses. Such rigid measures are in pleasing contrast to the routine of drawing the water under the bed clothes. This will also serve to accentuate the essential features: aseptic condition of catheter, antiseptisized field of manipulation, clean hands and the maintenance of an unbroken chain. Asepsis throughout. As "a chain is no stronger than its weakest link," so the slightest inconsistency in technique may frustrate our most elaborate duties. The use of the family jar is a common error. In reality no lubricant is needful, but its sterilization should be a

matter of course. It may be added that glass or metal catheter are preferable to rubber for various reasons. The prevention of extension in gonorrheal urethritis should enter largely in our combative efforts in this disease with the onset of odor urine. The urethra should be irrigated after the conclusion of the daily disinfection of the vagina with a 1-200 solution of bichloride. The instillation of a few drops of 4 per cent cocaine solution should precede the irrigation, which should be confined to the urethra by pressing its proximal end well up under the symphysis, so that none of the fluid enter the bladder. The habit of long retention of the urine by women through motives of modesty, inability to evacuate the bladder at regular or suitable intervals is mentioned as a cause. Over-distention causing a cutting off of the blood supply to the mucus membrane of the bladder with total or a partial death has resulted in an exfoliation of the entire mucus membrane in sheets and flakes. Jewett reports such a case after retention ninety-six hours amounting to nine pints. I will also mention the danger of accidental chemical injection of the bladder and the subsequent care of plastic cases in gynecology. One of the most desperate and aggravated cases of cystitis I ever saw occurred from the accidental introduction of the irrigating catheter into the bladder and injection of quite a quantity of bichloride solution 1-500 in a tight restoration posterior vaginal wall. I have known that accident to happen sufficiently often to have a special irrigating tube made for these cases, that will not go into the urethra.

Decomposition is in most cases the result of bacteria ingress. Ammonia salts from the broken down urea convert the normal slight acidity of the urine into a marked alkalinity, thus precipitating amorphous phosphates, which unite with the magnesia salts to form the ammonia magnesium compound, the crystal of which is such a constituent of cystitis urines. This chronic change continues as long as the decomposing agent is present. The other causal factors are self-explanatory. In the initial stages of the inflammation of the bladder, the mucus membrane undergoes the pathologic changes incidental to catarrhal processes of that tissue elsewhere, which are intensified by the abnormal condition of the urine. In the presence of the mucus membrane, breakdowns in shreds and admixing with the pus in the urine gives the characteristic sediment in turbid phosphate urine. Prolonged irrigation is necessary to remove the debris to allow the cystoscopic inspection. The involvement may be localized in hyperemic patches or going to some demonstrable point of irritation or infection. Blood may be extravasable under the membrane from construction on overcharged capillaries, which appear in echemotic spots. It also may cover certain abraded areas after extravasation. The anatomic changes in the chronic form, like the natural history of this affection, is more a change of degree marked by an arbitrary chronologic standard. A constant change, however, of chronic cystitis is the hypertrophy of the bladder wall and the lessened capacity from resulting contraction.

After thickening of the bladder wall, occlusion of the ureters occur, with damming back of the urine, causing dilation of the ureter and renal pelvis, hydronephrosis, infection extending will give rise to pyonephrosis. Diptheritic inflammation may result in any amount of destruction that sometimes perforates the bladder and involves adjacent structures. Frequency of micturition and intense burning, bearing down pain, during and immediately afterwards are the most evident symptoms. The frequency sometimes amounts to one-hundred times a day, and the constant desire sometimes keeps the woman on the vessel for hours at a time. The pain in some cases becoming excruciating, causing the patient to scream out in frenzy. It is a clinical picture pathogonomic and distressing. Retention is rare and incontinence infrequent in acute cystitis. Hematuria depends on the intensity of the inflammation and may vary from a few drops at the end of urination to such a considerable quantity as

to appear almost like pure blood. There is an aching bearing down feeling weight in the perineum that is sometimes associated with rectal tenesmus. The super-pubic region is tender, and the discomfort is increased sometimes with the slightest jar. The legs are drawn up in the recumbent position, and if the sufferer is able to walk, it is accomplished with pain causing her to shamble in a stooping position. In graver septic and diptheritic cases, constitutional symtoms, fever, chills and sweats, sometimes delirium, ending in suppression, uremia and death.

The appearance of the urine is characteristic in chronic cystitis. It is murky and filled with shreds that may be seen floating around. If allowed to stand it will present a thick slimy sediment that sticks to the bottom of the receptacle, when it is inverted. If bacteroid fermentation has occurred either within or without the bladder the deposit will consist of the alakaline phosphates of a dark brick red color, microscopic examination will demonstrate the crystals in the last condition and abundant pus cells, sometimes with red capillaries as well, frequently entangled with long mucous cylinders. Bladder epithelium will be scattering and more or less abundant in the acute and chronic forms respectively. It is quite impossible to distinguish between cystitis and pyelitis by the epithelium found microscopically. The presence of pus or blood gives a decided reaction for albumin.

The odor is ammoniacal and fetid. Specific gravity is variable and inconsequential. The absence of the findings in clinical manifestations of cystitis distinguish cystitis from irritable bladder, (a reflex from same cause that patient examination will often reveal). Aside from the distinct gain in making direct applications to localized areas, the most valuable aid to the cystoscope is the exact diagnosis of the existing conditions. Kelley found a sinus communicating with a tubercular ovary which would have been impossible otherwise. In addition to furnishing visual inspection of the vesical mucus, it affords means of determining the presence or absence of disease of one or both ureters and kidneys, which otherwise might be regarded as cystitis. The accuracy and value of this procedure is scarcely paralleled in mechanical aids to diagnosis, since the introduction of the thermometer.

I believe it is an axiom in medicine that the greater the number of remedies in a given disease, the less reliance can be placed in any of them. This is typically true of the disease under consideration. The whole list of balsams and oils, astringents and antiseptics, acids and alkaline, diuretic and opiates, have been used with routine empiricism. Irrigations have been practiced with nearly everything that is soluble in water, and many drugs that are not. Some misguided enthusiast, inspired with a great love for the "eternal fitness of things," has even recommended irrigation with normal urine. I spent the greater part of six months of my hospital experience washing bladders, and have about settled its scope and limitations at least to my own satisfaction.

Instead of using the multitude of irrigating solutions that have been urged by this and that observer, I think we may reduce the number to about four, which are employed for as many reasons. For ordinary purposes normal sterilized salt solution (a drachm to the quart) is the most useful fluid, in that it is readily soluble and more cleansing than water. In chronic cases with alkaline fermentation a half saturated solution of boric acid seems to be more efficacious. Kelley recommends bichloride solution 1-100,000, increasing the strength by taking off 5,000 until about 1-20,000 is reached. The infinitesimal strength may be the explanation of why the bichloride has been almost excluded from the bladder.

Salicylic acid is an excellent germicide and is especially efficacious in penetrating the thick, slimy coat of muco-pus that invests the bladder wall. Eight grains dissolved in an ounce of alcohol and added to a pint of hot water is equal in efficiency to Theirick's solution. The sovereign remedy in the treatment of inflammation of the mucus membrane is

nitrate of silver, 1-10 to 1-2 per cent. Strong salt solution should be injected to convert the nitrate into a harmless chloride. All local means are inferior to the direct application of remedial agents through the cystoscopic tube, which, insuring application to the affected area only, allow the employing of much stronger solutions of silver three to five per cent, once a week.

The correct apparatus for bladder irrigation should consist of a glass jar or fountain syringe with gravity tube and glass catheter. The tip facilitates detachment from the intermediate rubber tube instead of the catheter itself. The detachment and readjustment causes unnecessary pain, where the organ is intolerant to even a few ounces. The little glass piston syringe should be used.

In the synopsis of treatment as frequently occurs in actual treatment, I have hastened to the local means to the exclusion so far of the general systemic management, a neglected but important matter. In the early cases the patient should be put to bed and composure enjoined. She should have a mild, non-stimulating diet, milk being the chief article, occasionally dashed with cream to prevent the constipation. Salines, as in all pelvic inflammation, are invaluable. Relief from pain had best be obtained, if possible, from topical means, viz., the quick hot vagina douche, hotwater bags, or compresses to the hypogastrium. Internal medicine should be confined to correcting abnormal conditions of the urine.

Acetate of potash in hyperacidity and benzoic acid for excessive alkalinity. It is unnecessary to state many cases are intractable to all forms of medication, and it is fortunate that there remain a perfect assurance of entire relief to these wretched individuals. I refer to the artificial vesico-vaginal fistula as applied to the otherwise incurable cases of cystitis in women by that venerable benefactor to suffering women, Thomas Addis Emmett. This operation, like the plastic operation devised by Emmett, in that it has remained unchanged since it was given to a waiting world by its illustrious originator.

The two essentials of rest and drainage are fulfilled, and by the union of vagina mucosa to vesical mucus petulency of the opening is insured. The beneficence of this procedure to the afflicted sufferers is best proven by their disinclination to have the fistula cleaned. The operation is best performed in Sims position. The vesico-vaginal septum just behind the urethra is fixed with a tenaculum and inclosed in the middle line with keen bent scissors, on the point of a sound introduced through the urethra. The mucus surface of the bladder and vagina are united by silver sutures. Irrigation and time complete the cure. The sutures are removed on the tenth day.

The only caution I will urge is the reiteration of the advice of the great Master himself: "Do not close the opening too soon; six months is an average time."

It is a gratifying circumstance that one of the most dreaded maladies that woman is prone to is curable by one of the simplest and most satisfactory operations in surgery.

CASE RECORDS.*

(ANTE-MORTEM AND POST-MORTEM) AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES AT THE MASSACHUSETTS GENERAL HOSPITAL

EDITED FOR THE USE OF PRACTITIONERS BY

RICHARD C. CABOT, M. D., AND HUGH CABOT, M. D.

F. M. PAINTER, ASSISTANT EDITOR

CASE 7021.

A Canadian granite polisher of fifty-two entered August 6, 1920.

F. H. His father died of "heart trouble," one sister of kidney trouble, two uncles of tuberculosis, to which the patient had never been exposed. His wife had had one child stillborn.

O. H. His work was heavy. He was often wet through. There was some stone dust.

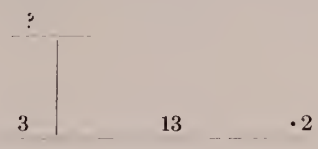
P. H. Until a year ago his health had been good. Thirty years ago with an attack of

*Published in THE JOURNAL OF THE FLORIDA MEDICAL ASSOCIATION with the permission of the Massachusetts General Hospital.—ED.

"grippe" he had a bad attack of tonsillitis. At twenty-nine he had gonorrhea for three or four months. For over twenty years he had had some indefinite palpitation. The left palpebral fissure was greater than the right. He said it had always been so. For years he had had some gas and pyrosis, and coarse tremor of the hands. For six years he had urinated two or three times at night. For three years his eyes had troubled him. The left side of the face was possibly weaker than the right. Since May the backs of both hands and wrists had been deeply pigmented. For weeks both forearms had been desquamating. His best weight was 215 pounds, his usual weight 200-210. (Weight in hospital 212.)

Habits. He occasionally took whiskey. He had had financial worry for six or seven years.

P. I. A year ago he had an ulcerated tooth for two weeks followed by dull pain in the right then in the left calf muscle for one week. In December he had painful swelling of the right foot for two days so that he could not walk, followed by "neuralgia" of the hips and shoulders. His urine was examined by a physician, who found "a suspicion of kidney trouble." At that time the patient used to expectorate saliva for an hour or two after eating. His appetite was poor, with a craving for sour things. From November, 1919, to April, 1920, he had excessive thirst, drinking two or more quarts a day. In May, after two days of digging in a ditch with wet feet, his feet became swollen at night and remained so. He stopped work for a week, lying down most of the time. The swelling was not much reduced. His abdomen was slightly distented. His doctor told him to return to work. After half a day the swelling was much increased, and he was short of breath. He remained in bed five weeks, getting up occasionally. For the past three months he had taken little salt. From July 1 to 24 he was up and about, though the edema had not entirely disappeared from the face and hands. He gradually became worse. August 1 he again took to his bed and had remained there ever since, with swelling of the abdomen and legs. Since the onset the tremor of the hands had been worse and he had not sweat at all, though he usually sweat profusely. For three weeks he had felt stupid and sleepy at times.



P. E. Well nourished. Small lipoma on right forearm. Tongue protruded with questionable tremor. *Lungs.* A few fine rales in both lower backs. *Heart.* Apex impulse seen and felt in 4th space 13 cm. to the left. Action slightly rapid. P_2 less than A_2 and accentuated. A systolic murmur and thrill at the apex. Diastolic murmur over left 4th interspace at sternal border. Pulses of high volume and tension. Artery walls palpable. Brachials tortuous. Systolic B. P. 180-210, diastolic 75-130. *Abdomen* distended and tympanitic, with fluid wave. Shifting dullness. Liver dullness to 4th rib above. Edge not felt. *Genitals.* Edema of scrotum. *Extremities.* Tremor of hands and arms. Marked edema of feet. *Pupils.* Left greater than right, otherwise pupils normal. *Fundi.* Small retinal hemorrhage in right eye. *Reflexes* normal.

T. 98°-100.7° until August 15, then 99.2°-102.9° for three days, later 98°-100.3°. *P.* 71-120; only once below 85. *R.* 17-38. *Urine.* ℥ 6-32 when recorded. Sp. gr. 1010-1016. Dark at three of six examinations, clody at four. Alkaline at two. A trace of albumin at all. Loaded with leucocytes at two examinations, with red cells at one, many white at two others, 25 in a field at a third, many red at one, occasional at another, granular casts at two. *Renal function* 10%. *Schlayer test.* Cloudy and alkaline at all seven examinations. A trace of albumin at all. Sp. gr. 1014-1016. Amount 50-75 c.c. at each test by day, total by day 395 c.c. 500 c.c. in all at night. Chlorides. Total day 0.395, total night 0.5. *Blood.* Hgb. 75%. Leucocytes 9,000-24,800. Polynuclears 57%. Reds 3,000,000-3,128,000. *Non-protein nitrogen* 84.3 mgm. to 108.6 mgm. One *Wassermann* negative, one

strongly positive. *Blood phosphates* 11 8/10 mgm. per 100 c.c. plasma. *Stools.* Guaiac positive at two of three examinations. *X-ray.* Very definite change in heart shadow, especially to the left. Apparent widening of supracardiac shadow, perhaps due in large part to tortuosity and high position of heart. Probable sclerosis. May be some dilatation.

The patient was given a salt-free low protein diet with liquids limited to 1200 c.c. He was given veronal gr. x the night of entrance. August 8 KI minims v t. i. d. was ordered, and August 11 digipuratum gr. iii t. i. d. for three days. Morphia was given only once, August 13. August 14 digipuratum gr. iss was ordered t. i. d., and Karrel diet. The digipuratum had no diuretic effect to August 14. The edema continued to be marked.

August 16 abdominal paracentesis was done, 5,500 c.c. of slightly cloudy straw colored fluid, sp. gr. 1010, cells 510, all lymphocytes.

During the next three days the temperature and leucocyte count were elevated. The patient became weaker. There was dullness at both bases, perhaps a small amount of free fluid. The edema of the scrotum had disappeared, that of the legs was slowly going. There was slight edema of the left arm. There was still drainage from the wound following abdominal paracentesis. August 19 the diastolic to the left of the sternum seemed very faint. August 20 another paracentesis was done, with removal of 1200 c.c. of slightly cloudy reddish fluid. A few minutes after this the patient became markedly weaker and very pale, with scarcely perceptible pulse. The breathing became periodic and gasping. An attempt at intravenous infusion of saline was unsuccessful because of collapse of the veins. That day the patient died.

CASE 7021.

DISCUSSION.

By Dr. Richard C. Cabot

Notes of the Record

With a granite polisher we think of the lung troubles that stone-cutting certainly has something to do with. But I should say that if he had got along with his stone dust up to fifty-one years it probably was not the stone dust that affected him now. It is not likely that at fifty-one dust would begin to do things to his lungs.

The eye on the left side seems to be wider. One would expect it to be drooping if the left side of the face is weaker.

Pigmentation of course makes us think of pellagra. He is at the pellagra age, when lots of people do get it. On the other hand this is August; from May to August is the time when people are much in the sun. He may have simply got tanned.

This is a rather interesting sequence of events—an ulcerated tooth and pain in the legs. I suppose they might have some connection.

At his age what else besides diabetes will bring on excessive thirst? Chronic nephritis will do that, and thirst may be the only thing the man complains of—not of his heart, not of swelling, not of anything except thirst, especially of course in cases of polyuria.

Probably some one had told this patient to stop taking salt. I don't believe he would have stopped it himself.

The present illness brings out things that narrow it down, I should say, to heart or kidney or both, the kidney seeming the more probable of the two. I never knew a man to be thirsty from heart trouble.

The heart sounds were both accentuated I suppose. That is a queer way of putting it.

A width of 9.5 cm. at the top of the heart is pretty significant. That is almost twice what it ought to be. So that the X-ray measurements make us think there is moderate hypertrophy of the heart and increase of the size of the aorta.

This is rather an irregular fever, but on the whole we should say it constituted a fever.

He had a moderate amount of white and red cells in his urine; that is what the urine examination comes to. The renal function is one of the border-line cases that is bother-

some. With a renal function below ten I feel clear that the kidney is distinctly injured; above ten I do not feel clear; when it is ten it does not help us much. The essential thing is that the gravity is fixed at fourteen to sixteen. He has a distinctive nocturnal increase which goes with fixed specific gravity and low function.

He has definite secondary anemia.

The non-protein nitrogen is rather high.

The blood phosphates seem to be within normal limits.

The X-ray showed no aneurism apparently. If they had thought there was aneurism they would have said so. That they do not say so is very clear evidence that they thought it was all arteriosclerosis.

After the tap I guess the house officer was wondering whether he properly boiled that needle. But if he was accustomed to tapping he was not wondering, because he knew that no matter how dirty the needle was the peritoneum would not be infected. One would have to inject a culture in order to infect it, which is comforting, because every now and then we all make a slip—unless we are surgeons. But I will prophesy now that they will not find any harm resulting from that tap.

I will bet that diastolic murmur was not there at all.

The final collapse seems to hitch itself up to the last paracentesis. We wonder whether they struck a vein and got a hemorrhage.

DIFFERENTIAL DIAGNOSIS.

Of course this last is only a complication. The essential facts seem to me to be that he gradually developed dyspnea and edema at the age of fifty-one; that he became very thirsty at that same age; that on examination they found the evidence of a big heart, dilated arch with high blood pressure and questionable diastolic murmur; that his kidneys showed strong evidence of marked damage, chronic nephritis. The most definite thing about the case is the evidence against the kidneys, the constant presence of albumin, of fixed gravity, of low if not distinctively low functional test, and of nycturia. Then we have secondary anemia, easily explained by kidney trouble and not to be explained by heart trouble. We have a negative Wassermann; no evidence of aneurism. On the whole the evidence is against syphilitic aortitis as cause of that diastolic murmur. If he did not have syphilitic aortitis I do not believe he had any valve lesion, for the only other thing would be a rheumatic process on the valve which would have shown itself earlier than this, would have produced other symptoms, and would not have come, in all probability, with so high a blood pressure. If he ever had a diastolic murmur it was in all probability a functional murmur, which is possible though rare. The cases in which I have observed it were just like this, with high blood pressure and anemia.

Nothing more is said about those arms and hands and the change in color. It is probable that we can drop that clue and not follow it any farther. If they had thought there was anything more in it we should have more about the mouth and the gastro-intestinal tract where they look for pellagra.

Chronic nephritis, arteriosclerotic type; hypertrophy and dilatation of the heart; and nothing else. The tremor of his hands and tongue might suggest general paresis, but we have nothing in the pupils, reflexes, or mental state to make us think of that further, and they evidently did not think of it or they would have tapped his cord. So that I guess it is another of the commonest of all diseases, arteriosclerosis, showing itself this time especially in the kidney with resulting effects upon the heart. As to his lungs, I see no reason to suppose anything particular; some edema and nothing else.

The abdomen. I judge that he did not have any cirrhosis of the liver. He certainly had something more than that. If cirrhosis, he must have had nephritis too. The fluid in the abdomen is perfectly consistent with cirrhosis. They do not say anything about feeling the liver, which they naturally would do after tapping. He had plenty of edema of lungs and legs—not confined to the abdominal cavity. So that I think we can rule out

cirrhosis. I have already said that I do not believe he had any peritoneal infection. There is nothing to indicate disease of the nervous system or the gastro-intestinal tract.

Perhaps we ought to ask, What about the bladder and kidneys? There were red cells and white cells in the urine. Could he have pyelonephritis or perhaps stone? We had a case here some time ago of perfectly silent stone in the kidney and nothing but pus in the urine to suggest it. I do not see how we can exclude it, but neither do I see how we can do anything more than mention the possibility. He never had bladder symptoms, frequency or pain. I do not believe any particular cause will be found for the red and white cells in the urine. In a great many cases no cause is found for red and white cells in the urine. He may have a urinary infection, but I doubt it.

Dr. Richardson: In regard to the fluid taken from the abdominal cavity, was anything said about cells?

Dr. Cabot: Yes; they counted the cells and found a rather larger number than usual of lymphocytes. Nothing was said about blood. But after the last time they tapped him he suddenly collapsed, got very pale and short of breath. It seems to me quite possible that they had run into something of a vessel there and got some bleeding in the abdominal cavity. I should suppose you would find some blood in the abdomen.

CLINICAL DIAGNOSIS
(from Hospital Record)

Cardio-renal disease.
Hypertension.
Chronic nephritis.
Arteriosclerosis.
Aortitis?

DR. RICHARD C. CABOT'S DIAGNOSIS

Chronic nephritis, arteriosclerotic.
Arteriosclerosis.
Hypertrophy and dilatation of the heart.
Hemorrhage into the peritoneal cavity.

ANATOMICAL DIAGNOSIS.

1. Primary fatal lesion.
 Ruptured aneurism of splenic artery with hemorrhage into the peritoneal cavity.
2. Secondary or terminal lesions.
 Arteriosclerosis, slight.
 Chronic glomerulo-nephritis.
 Cirrhosis of the liver.
 Focal necrosis of the pancreas.
 Hypertrophy of the spleen.
 Hypertrophy and dilatation of the heart.
 Focal pneumonia, right lung.
 Acute endocarditis of aortic valve.
 Acute focal pleuritis, right lung.
 Slight hydrothorax.
 Slight hydropericardium.
 Ascites.
 Anasarca.
3. Historical landmarks.
 Slight chronic pleuritis, left.
 Small concretion in calyx of left kidney.

Dr. Richardson: This was a tall, poorly nourished white man. In the abdominal wall were three puncture marks. When we laid open the peritoneal cavity we found 3000 c.c. of bloody fluid and a mass of currant-jelly-like blood clot weighing 300 grams. It did not seem as if it could come from the puncture and further examination showed it to be from ruptured aneurism of the splenic artery.

There was very little arteriosclerosis excepting of the splenic artery. There was nothing on the heart valves except two small vegetations on the aortic cusps,—a little acute endocarditis. The heart was enlarged, weighed 545 grams, (normally 200-300) with a thick left ventricle—in its general character one that would go well with chronic nephritis.

Chronic nephritis was present, of the glomerular type.

In the pleural cavities we found about 200 c.c. of thin pale fluid, and on the left side a little patch of pleuritis and a little focal pneumonia. Was he tapped on the right side?

Dr. Cabot: I do not think they tapped his chest at all, only his belly.

Dr. Richardson: There was a little focal pleuritis, a little focal pneumonia, acute

endocarditis, hypertrophy and dilatation of the heart, the hypertrophy being most marked on the left side, as in association with chronic nephritis.

There was an enlarged spleen along with the cirrhosis of the liver. In the calyx of the left kidney was a small stone.

Dr. Cabot: You are finding a great many more stones this year. Are you looking for them harder? This is a regular granite quarry.

Dr. Richardson: I don't think we look harder, but I hope better.

Death was due to the ruptured aneurism, another instance of the localization of arteriosclerosis; then the chronic nephritis, the resultant hypertrophy and dilatation of the heart, the hypertrophy being the dominant thing; and then the terminal focal pneumonia and acute endocarditis; the hydrothorax, ascites and anasarca following, of course, the broken compensation.

Dr. Cabot: I want to hear more about the aneurism of the splenic artery.

Dr. Richardson: They occur every once in a while. We have not seen so very many of them here, but within a year or so I think we have had three cases. This I think is the only ruptured one. One case was that of a woman sixty-odd years of age, where there were three aneurisms on the splenic artery; but other than that they were present they seemed to have nothing to do with her death.

Dr. G. W. W. Brewster: Do you think the tapping had anything to do with the rupture?

Dr. Richardson: No, but it was a little bit startling for a minute.

Dr. Cabot: Was this the arteriosclerotic type of change or the syphilitic?

Dr. Richardson: It was arteriosclerotic, with no evidence of syphilis.

Dr. Cabot: Is that what you would expect?

Dr. Richardson: Yes, ordinarily. There is this to be said about the splenic artery; sclerosis is apt to make its appearance there as soon as anywhere. The ruling out of syphilis shows no definite lesion except this arteriosclerotic change.

Dr. Cabot: He had one strongly positive Wassermann and one negative.

Dr. Richardson: In his tissues there was no evidence of syphilis.

Dr. Cabot: Doesn't it surprise you that an arteriosclerotic aneurism should break? They do not ordinarily lead to rupture, do they?

Dr. Richardson: If I give a little description of the thing itself you will see the mechanics of it. In the first portion of the splenic artery, at a point 6 cm. from its origin, there was a fibrous ring, and extending around the artery a short distance below that another fibrous ring. The aneurism was between these two rings. The sac wall showed fibrous and fibrocalcareous change and at one point a small atheromatous crevice where the blood had dissected through the wall. In the aorta one of the favorite places for a dissecting aneurism is in the arch, where we get first a fibrocalcareous plaque with an atheromatous margin, and the dissection may be so extensive as to produce the so-called double aorta. That is the only reason I know, and that condition was present here in the wall of the splenic aneurism.

Dr. Cabot: I did not follow up the point about the red and white cells. There was nothing in the urinary tract to explain them, was there?

Dr. Richardson: Nothing except the small stone,—no cystitis and no pyelitis.

Dr. Cabot: So I think we can say that we do not know the cause of the red and white cells in this case.

PROPAGANDA FOR REFORM.

Calcidin Tablets-Abbott. — Calcidin is claimed to be a mixture of iodin, lime and starch. In contact with water, the iodin and lime react to form calcium iodid and calcium iodate. By the acid of the gastric juice, the calcium iodid and calcium iodate are decomposed with liberation of free iodin. The administration of calcidin tablets amounts to giving free (elementary) iodin. The effects

produced by the administration of free iodin appear not to differ from those produced by the administration of iodids, and, therefore, calcidin has no advantage over the iodids, such as sodium iodid. (*Jour. A. M. A.*, September 25, 1920, p. 892.)

Parathesin Not Admitted to N. N. R. —The Council on Pharmacy and Chemistry reports that the local anesthetic ethyl paramino-benzoate was first introduced as "Anesthesin" or "Anæsthesin"; that the product is not patented in the United States, and that it may be manufactured by any firm which chooses to do so. In order that a common name for the drug might be available, the Council coined the short, easily remembered and descriptive name "Benzocaine." As the term "Anesthesin" had become a common name for the drug, the Council also recognized this as a synonym for benzocaine. While the Council had previously recognized the brand of benzocaine manufactured by the H. A. Metz Laboratories, Inc., under the name "Anesthesin," this firm requested recognition of the product as "Parathesin." As the use of one substance under several names causes confusion and retards rational therapeutic, the Council's rules provide against the recognition of proprietary names for nonproprietary, established drugs. For this reason, and because the legitimate interests of the manufacturer may be safeguarded by appending his name or initials to the common name, benzocaine or anesthesin, the Council refused recognition to the designation "Parathesin." (*Jour. A. M. A.*, November 13, 1920, p. 1358.)

More Misbranded Nostrums.—The following products have been the subject of prosecution by the federal authorities, chiefly because the therapeutic claims advanced for them were held false and fraudulent: Methylax Blue Pearls (Pfeiffer Chemical Co.), capsules containing cubebs, methylene blue and probably copaiba and kava kava. Jax Capsules and Antiseptic Injection (The Tropical Cooperative Co.), the capsules containing cubebs, balsam of copaiba and corn starch while the injection was reported to consist of a solution containing phenol, thymol, methol, boric acid and zinc sulphate. Stops It In One Day (O. K. Remedy Co.), consisting of two preparations, a bottle containing a dilute solution of berberin sulphate, and a tube containing a mixture of potassium permanganate and potassium sulphate. Purola Kidney and Liver Remedy, Diarrhea Mixture, Femalin, Sarsaparilla Compound and Compound Extract of Buchu (The Blumauer-Frank Drug Co.), the first, a solution containing vegetable extractives carrying emodin and resin, potassium, acetate, sugars and a trace of salicylic acid; the second, a solution of opium, camphor, capsicum extractives, rhubarb, oils of peppermint and anise and a trace of gambir; the third, a solution containing glycyrrhiza extractives, emodin, resin, a trace of alkaloid, sugar, glycerin and aromatics; the fourth, a solution of vegetable extractives carrying emodin, indications of saponin, glycyrrhizin, alkaloids, volatile oils, sugar, glucose and potassium iodid; the fifth, a solution of buchu extractives, sugar licorice and extractives, potassium acetate and little, if any emodin. Planter's Golden Crown Special (Planter Medicine Co.), consisting essentially of oil of cassia, methyl salicylate, copaiba, alkaloids of sanguinaria, ethyl nitrite, water and alcohol. (*Jour. A. M. A.*, April 23, 1921, p. 1185.)

Using Unfit Ether. — In the case of Moehlenbrook versus Parke, Davis and Company, et al., the Supreme Court of Minnesota denied the surgeons who had administered the ether a new trial, after a verdict had been entered against both the manufacturer and the surgeons. The Supreme Court holds that for the death which resulted from the use of the unfit ether both the manufacturer and the surgeons were responsible. The surgeons were held to be negligent in administering to a patient ether that was unfit for use and in their care after the ether was administered. (*Jour. A. M. A.*, September 11, 1920, p. 763.)

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THE NATIONAL BOARD OF MEDICAL EXAMINERS.

The National Board of Medical Examiners has just completed the first five years' work and with it the trial period of its usefulness. The principle which this Board has stood for, namely, the establishment of a thorough test of fitness to practice medicine which might safely be accepted throughout this country and abroad, has been widely accepted. Since this Board was organized by Dr. W. L. Rodman, in 1915, eleven examinations have been held. These examinations have been conducted on the plan of holding at one sitting, a written, practical and clinical test for candidates with certain qualifications, namely, a four-year high-school course, two years of college work, including one year of Physics, Chemistry, and Biology, graduation from a Class A Medical School and one year's internship in an acceptable hospital. These examinations have covered all the subjects of the medical school curriculum and have been conducted by members of the Board with members of the profession resident in the place of examination appointed to help them. Such examinations have been held in Washington, Philadelphia, New York City, Boston, Chicago, St. Louis, Rochester (Minnesota) and Minneapolis. During the war a combined examination was held at Fort Oglethorpe and Fort Riley. There have been 325 candidates examined, of whom 269 have passed and been granted certificates.

Starting with the endorsement of the Council of Medical Education of the American Medical Association, American Medical College Association and various sectional Medical Societies, the recognition of the Army, Navy and Public Health Service Medical Corps of the United States and cer-

tain State Boards of Medical Examiners, the certificate is now recognized. Also by twenty states as follows: Alabama, Arizona, Colorado, Delaware, Florida, Georgia, Idaho, Iowa, Kentucky, Maryland, Minnesota, Nebraska, New Hampshire, New Jersey, North Carolina, North Dakota, Pennsylvania, Rhode Island, Vermont and Virginia, the Conjoint Board of England, the Triple Qualification Board of Scotland, the American College of Surgeons and the Mayo Foundation of the University of Minnesota.

There has been such a widespread demand for an opportunity to secure this certificate by examination, that the Board has now adopted and will put into effect at once the following plan: Part I, to consist of a written examination in the six fundamental medical sciences: Anatomy, including histology and embryology; Physiology; Physiological Chemistry; General Pathology; Bacteriology; Materia Medica and Pharmacology. Part II, to consist of a written examination in the four following subjects: Medicine, including pediatrics, neuropsychiatry, and therapeutics; Surgery, including applied anatomy, surgical pathology and surgical specialties; Obstetrics and Gynecology; Public Health, including hygiene and medical jurisprudence. Part III, to consist of a practical examination in each of the following four subjects: Clinical Medicine, including medical pathology, applied physiology, clinical chemistry, clinical microscopy and dermatology; Clinical Surgery, including applied anatomy, surgical pathology, operative surgery, and the surgical specialties of the diseases of the eye, ear, nose and throat; Obstetrics and Gynecology; Public Health, including sanitary bacteriology and the communicable diseases.

Parts I and II will be conducted as written examinations in Class A Medical Schools and Part III will be entirely practical and clinical. In order to facilitate the carrying out of Part III, subsidiary boards will be appointed in the following cities: Boston, New York, Philadelphia, Minneapolis, Iowa City, San Francisco, Denver, New Orleans, Baltimore, Galveston, Cleveland, St. Louis, Chicago, Washington, D. C., and Nashville, and these boards will function under the direction of the National Board. The fee of $25 for the first part, $25 for the second part and $50 for the third part will be charged. In order to help the Board the Carnegie Foundation has appropriated $100,000 over a period of five years.

At the annual meeting held June 13th of this year, in Boston, the following officers were elected: M. W. Ireland, Surgeon General, President; J. S. Rodman, M. D., Secretary-Treasurer; E. S. Elwood, Managing Director.

Mr. Elwood will personally visit all Class A Schools during the college year to further explain the examination, etc., to those interested. Further information may be had from the Secretary-Treasurer, Medical Arts Building, Philadelphia.

THE FLORIDA MIDLAND MEDICAL SOCIETY.

The Florida Midland Medical Society were guests of the Pinellas County doctors at the Lizotte Hotel, St. Petersburg Beach, on Wednesday, October 12th. All officers were present and every man scheduled on the program was ready with an excellent paper which was listened to with much appreciation, as evidenced by the discussions afterwards. Dr. Law in his paper on "Reconstruction" strongly advocated the "Back to the Farm" movement for convalescent soldiers, especially on account of the pathological effects. Dr. Snyder, of the Public

Health Service, U. S. Veterans Department, made an interesting comparison of the methods of the United States and Canada in establishing ex-soldiers on farm lands, and recommended farm life as a cure for "compensationitis," or lack of initiative while the pay check comes regularly to engage in any active work. Dr. James Sampson, formerly a Canadian citizen and now a resident of St. Petersburg, has been studying the situation in Canada and stated that during the past two years only a very small per cent of the ex-soldiers who took farm loans have failed to get good returns, and there is every indication to believe that the Canadian government will derive substantial financial benefit on account of the greatly increased acreage under cultivation.

During the luncheon hour the discussions related to public health. Dr. Dame, of Jacksonville, outlined briefly the powers and duties of the various departments comprising the State Board of Health and showed that the work is seriously handicapped because of the smallness of the appropriations for its use. Mayor Mitchell, of St. Petersburg, spoke of the necessity of co-operation between city officials and physicians. Dr. Wyman showed that the food inspector is an important factor in promoting health conditions in a community and that his work can be made more efficient if physicians will report promptly any communicable diseases in families whose members are even remotely connected with any public milk supply. Dr. J. R. Harris, the new health officer of Tampa, spoke particularly of the duties of a physician in educating the people in matters pertaining to contagious diseases and the importance of reporting promptly any suspected cases, especially in hotels and apartment houses where large numbers of people are endangered.

The following officers were elected to serve during the next year: Dr. G. H. Edwards, Orlando, President; Dr. K. L. Cline, Vice-President, De Soto County; Dr. J. C. Knight, Vice-President, Hillsboro County; Dr. L. Lambdin, Vice-President, Pinellas County; Dr. J. H. Coffee, Vice-President, Polk and Orange Counties jointly; Dr. H. M. Beardoll, Orlando, Secretary-Treasurer.

Plant City was selected as the next place of meeting, the time to be the second Wednesday in April.

After a hearty vote of thanks for the hospitality extended, the society adjourned, and the remainder of the afternoon was spent in driving, playing golf and other recreations.

The report of the Secretary-Treasurer showed an increase in membership of about twenty-five during the year and a total enrollment of sixty-five names. Several new applications were presented at this meeting.

NEWS NOTES AND PERSONAL ITEMS.

At a meeting recently held in Ocala of representatives of several county units, the Central Florida Medical Society was formed. It was decided to try to incorporate the members of the County Medical Societies in the Fifth and Eighth Councillor Districts of the State Medical Association; also all dentists in this area who are members of their State association, and care to join.

There is every reason to believe that this is going to be a good working society, in conjunction with the State Association. Meetings are to be held quarterly on the second Thursdays of March, June, September and December of the year. The next meeting will be in Gainesville, June 9th, when a scientific program will be rendered.

Dues are $1.00 entrance fee, and yearly dues of $1.00.

The following officers were elected at the meeting of organization:

H. C. Dozier, M. D., Ocala, Fla., President.

J. H. Walters, M. D., Marion County, Vice-President.

M. H. DePass, M. D., Alachua County, Vice-President.

H. S. Cherry, M. D., Sumter County, Vice-President.

P. J. Hadson, M. D., Citrus County, Vice-President.

R. D. Ferguson, M. D., Reddick, Fla., Secretary-Treasurer.

NEW AND NONOFFICIAL REMEDIES.

Silver Arsphenamine.—Sodium Silver Arsphenamine.—The sodium salt of silver-diamino-dihydroxy-arseno-benzene, containing approximately 20 per cent of arsenic and approximately 15 per cent of silver. The action and uses of silver arsphenamine are essentially those of arsphenamine (see New and Nonofficial Remedies, 1921, p. 41). Its claimed advantage over other arsphenamine preparations is said to be due to the silver which improves the chemo-therapeutic index. In the presence of organic diseases of the heart, aneurysm, aortitis as well as other parenchymatous diseased conditions of the glandular structures, silver arsphenamine should be used with great caution and in small doses. The dose of silver arsphenamine is from 0.1 to 0.3 gm. for adults. To administer silver arsphenamine the product is dissolved in sterile distilled water without application of heat and without shaking, and then diluted with 0.4 per cent sodium chlorid solution to make 20 c.c. per 0.1 gm. of silver arsphenamine. (*Jour. A. M. A.*, May 7, 1921, p. 1312).

Suprarenalin.—A brand of epinephrine, N. N. R. (See New and Nonofficial Remedies, 1921, p. 107). Marketed only in the form of Suprarenalin Solution.

Suprarenalin Solution.—One thousand parts contain suprarenalin sulphite equivalent to one part of suprarenalin in physiological solution of sodium chlorid without addition of other preservatives. Armour & Co., Chicago.

Sterile Ampules of Benzyl Benzoate. —H. W. & D. 0.5 C.C.—One c.c. contains 0.5 c.c. benzyl benzoate-H. W. & D. (see New and Nonofficial Remedies, 1921, p. 61), diluted with olive oil. Each ampule contains more than 1 c.c. Hynson, Westcott & Dunning, Baltimore, Md.

Silver Diarsenol.—A brand of silver arsphenamine, N. N. R. (see *Jour. A. M. A.*, May 7, 1921, p. 1312). Silver Diarsenol is marketed in ampules containing, respectively, 0.05 Gm., 01.1 Gm., 01.15 Gm., 0.2 Gm., 0.25 Gm. of silver diarsenol. Diarsenol Co., Inc., Buffalo, N. Y. (*Jour. A. M. A.*, May 14, 1921, p. 1353).

Mercurochrome-220-Soluble.—The disodium salt of dibromo oxymercury fluorescin, containing 23 to 24 per cent of mercury. Mercurochrome-220-Soluble is a strong and rapidly acting germicide. It is active in urine, 1:1,000 solution killing Bacillus Coli and Staphylococcus aureus in this medium in one minute. It penetrates the tissues readily. The drug is tolerated in a strength of 1 per cent by the bladder, renal pelvis and urethra. A 2.5 per cent solution applied to the anterior urethra causes only temporary discomfort. The toxicity, when tested by intravenous injection into rabbits, is rather high. Mercurochrome-220-Soluble has been used in cystitis, urethritis and in chanchroidal ulcerations; also in affections of the eye and ear. Hynson, Westcott & Dunning, Baltimore, Md. (*Jour. A. M. A.*, May 21, 1921, p. 1403).

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ORIGINAL ARTICLES

VITAL STATISTICS AND MEDICINE.*

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Atlanta, Georgia.

Moses was the first director of the census of the children of Israel by special command of the Lord, with the condition that there should "be no plague among them when thou numberest them." David saw a pestilence, "and there died of the people from Dan even to Beersheba seventy thousand men." The stars above, our own hairs, and steps and days, our very births and deaths are all numbered. "All the world's a stage and all the men and women merely players; they have their exits and their entrances." Henry VIII in 1538 ordered all churches to keep true and exact records of all weddings, christenings and burials. "There is no exemption from the common lot, but all are bound by the same ailments and afflictions" with their fellows of all ages within the limits of incidence, race, geography and season. As Addison so wonderfully wrote, "The Bridge thou seest, said he, is Human Life; consider it attentively. They fell through, one after another, being quite tired and spent with so long a walk."

The data of vital statistics take account of the entrance, the walk on the bridge, the ailments and afflictons, the times of weariness and the falling through. Each verified fact and figure of this data is a contribution to the "treasury of physic." Statistics are not to be regarded as a new science, but as a method of all science, in the accumulation of facts, tendencies and proved sources of true conclusions. Science does not belong to "a wicked and perverse generation," but it does "seek signs" which, in its own tongue, it calls proof as distinguished from mere statement. One of the duties of State Boards of Health is to obtain medical and vital statistics. The collecting of such statistics is a true partnership which to be successful necessitates the persistent co-operation of all practicing physicians with the Director of Vital Statistics of the area served, be it the municipality, the county, the state or the nation. For just a little prompt paper work, the physician contributes in figures his experiences and reports his cases to this ever-increasing knowledge of our science.

It is, therefore, appropriate to ask the importance and the value of such statistics to the medical man. What are his contributions worth in totals? Is it worth while to know the statistical pathology of his political area? Are the numbers of births and deaths valuable, the rise and fall of populations? Is the registration and legal establishment of a birth of value to the individual and the state? Is baby life worth accounting for? Is it worth while knowing how long people live and of what they die? Is medicine just a science, or just an art, or is it not rather both a science and an art and a great administrative function as well? Shall this practitioner of medicine, this artist of this science live clinically unto himself alone, or shall he by reporting statistically and persistently his cases of births and deaths become an essential in the function of government, a contributor to his science, a greater service in his art? Is he merely a practitioner, or is he not a far better practitioner of higher and finer discernment and power,

* Read before the Southern Vital Statisticians' Association, at Atlanta, March, 1921.

by naming what he sees, when he sees it, and reporting the result of his services?

(1) Vital Statistics are one of the very foundations of the medical man's reasoning and practice. They form the evidence from which he may deduce findings in reference to marriages, births, morbidity rates of sickness and disease, the causes of death and the actual and comparative health of communities and nations.

(2) Statistical analysis is used more and more in study, in writing and in clinical medicine. Kilgore has shown that from 1840 to 1920 the average per cent of quantitative or statistical articles in representative medical journals has increased from 3 per cent to 50 per cent. Sydenham was the father of clinical medicine and discussed the qualities of disease and based his therapeutics on his personal experience. Disease to him was a qualitative process, variable in the kind and degree of symptoms. Modern medicine has taken this qualitative idea and added the idea of disease as a quantitative process as well. Sydenham discussed the kind of measles and the symptoms in the spring of the year 1670. The new medicine asks how many cases of measles were there, how many deaths, how many had pneumonia, and medical statistics properly reported and tabulated offer the only hope of answer.

(3) No man in medicine today can think with the larger vision and the higher bird's-eye view unless one phase of his thinking is in figures and statistics. For example, the baby was sick, and the doctor came and treated the baby, but the baby died. This is a fact, a bereavement, a national loss. But of what did the baby die? What was done to keep him from dying? What was done in his community, in his home, in his state, long before this particular baby was born, to keep all babies from dying? How many babies die, anyhow; at what age, and why do they die? Do certain communities have fewer deaths proportionately than the dead baby's community, and what preventive measures do they use? Quantitative medicine naturally inquires into methods of treatment and prevention, and discusses results.

(4) Vital Statistics are tolling the miserable comment on Georgia that 33.5 per cent of all deaths in this state in 1920 were children under ten years of age. In England in 1917 there were 64,483 deaths in children under one year of age. With such facts as these every doctor can enlist the ear of every mother, and through the mothers more preventive medicine can be done. The woman as a voter embodies the future biologic and sociologic statesmanship of the country. She is the voter who will call upon the physician and the physician upon the Bureau of Vital Statistics for such biologic facts as birth rates, the deaths from syphilis, dangers to babies from impure milk, why typhoid fever is found in any given community, hospitals, and poverty, and many similar problems. In two schools in Bibb County, 43 per cent of the children are from 7 to 30 per cent under weight. One-third of the children so far tested in America are 10 per cent under weight. We can see clearly now that applied pediatrics is only half the story; preventive pediatrics the other half. Prenatal care must develop. We must treat the baby long before his future parents reach maturity. It is education and energy versus ignorance and inertia. We need a health officer in every county and a physician who has legal entrance and authority in every school.

(5) Statistics teach the medical man how cheap mothers are. Bacteriology, aseptic methods, the price of careless ignorance are well known, yet histories in private practice, insurance examinations with their family history section, and public statistics with one accord prove the frequency of deaths from puerperal sepsis and toxemias, all largely preventable. Think of fifteen thousand mothers dying in the United States in one year from these causes. Vital Statistics

show that obstetrics is probably the most neglected field in medicine. Ignorant obstetrics is careless crime. Only two of fifteen foreign countries show higher death rates from childbirth. Such tables as the following show the distribution of mortality due to pregnancy and birth, and are the result of statistics:

Puerperal sepsis 431.7%
Puerperal albuminuria and convulsions 21.6%
Puerperal hemorrhage and other accidents of childbirth 25.5%
Other puerperal conditions 10.4%
Accidents of pregnancy 10.8%

(6) Statistics teach the comparative frequency of different diseases, the great factors in mortality, and where to concentrate our studies, efforts and therapeutics. We hear much of encephalitis lethargica, but there are more cases of malaria in one county in Mississippi in one year than cases of encephalitis in the entire country. Tuberculosis, heart disease and nephritis, in order, are the three great causes of death in the United States. The first is decreasing and the last two increasing. Statistics here point to the tendencies of disease. Acute appendicitis is the most frequent acute disease and chronic appendicitis the most frequent chronic disease in the abdomen. By the curves of possibility and probability we must bear in mind the appendix in abdominal diagnosis.

(7) As an administrative arm of the Government, medicine as yet has hardly begun to function. In 1879 there were only nineteen State Boards of Health, largely then theoretical and with little practical application. To the State Boards of Health and the Director of Vital Statistics medical men are turning for information. The doctor must co-operate by reporting; the Board of Health by condensing, concluding and publishing. The Director of Vital Statistics is the tabulating machine of the population, the keeper of the records of life and disease and death. He has hardly begun to work as yet. Every year will his duties and influence increase. We shall come to him to learn of industrial medicine, of the influence of occupation on life and the production of disease. We shall gain from him the results of therapeutics and the value of preventive medicine. From him pathological heredity will gain its greatest figures. The conditions of longevity, the harm or harmlessness of a babit, the value of pre-nuptial medical examinations, the veneral prevalence, the frequency, mortality and localization of cancer, the relative health of rural and urban populations, the name and location of healthy and unhealthy communities, for all these and many more facts will the medical man look to the keeper of the records.

We are in the midst of the greatest functioning and flowering of medicine and public health the world has ever known. Medicine holds the keys to human happiness and progress and safety. It is no longer just physician and patient, for medicine includes these and public health and preventive medicine, the medical profession and the public. All these with one accord look to Vital Statistics for information and guidance. In France, in 1918, there were 400,000 births and 800,000 deaths, not counting the deaths of soldiers; that is, two deaths to one birth. Medicine has given to vital statistics the profoundest fact about the French people. At this rate with France it is only a question of time. Our population is chiefly urban for the first time, yet 70 per cent of our land is uncultivated and the average city family runs out in three generations. The unconquered field in medicine is the group of acute respiratory diseases, influenza, bronchitis, pneumonia, whooping-cough and measles; with problems like these, the mere reporting on a postal card of a disease, a birth, a death seems unimportant; but, brick on brick, such reports form the increasing structure of vital figures to which the profession of medicine, the public and the State are turning with expectant frequency and demand.

FRACTURES OF THE FEMUR.*

J. S. Turberville, M. D.,
Century, Fla.

Fractures of the femur are among the most important and difficult to treat. In the discussion I shall follow the division laid down by Stimson, namely: Upper End, Head, Neck, Separation of Epiphysis, Through the Trochanter and Neck, Great Trochanter, Trochanter Minor, The Shaft, The Lower End, Intercondylar, Separation of Epiphysis, and Either Condyle.

Fractures of the Upper End of the Femur.

(a) Head: These are quite rare. Stimson collected six and added one.

(b) Neck: This is fairly common and may be in any part of the neck and in people of any age. Clinically and practically it makes no difference whether the fracture is within or without the capsule. The essential practical point so far as union is concerned is the integrity of enough periosteum to nourish the upper fragment. These fractures may be accompanied by splitting off of some of the shaft or of one or both trochanters. The symptoms are those common to all fractures. The signs are, external rotation of the leg and thigh, flattening of the groin, slight flexion of the leg on the knee, slight shortening, crepitation except in interlocked fragments. I may say here that it is not wise to try to elicit this sign on account of possible rupture of remaining periosteum or of loosening interlocked fragments. The X-ray is essential but not often available. It may be well to mention that occasionally there is internal rotation of the thigh and leg. The causes of these fractures are so obvious that I shall not mention them.

It is well to mention the common pathology in order to direct the treatment. The lower fragment is most commonly drawn upward and backward behind the upper and is rotated outward.

The treatment consists in bringing the fractured surfaces as close in contact as is possible, and this is done by traction, elevation of the limb by suspension, and abduction, pressure about the trochanter, posterior surface, and external, knee and ankle to overcome the external rotation or the reverse if the limb is inverted. Some authors advocate lateral traction.

There are various ways of meeting these mechanical indications — doubled, inclined planes; plaster paris fixation, enveloping the whole limb and the body to the ribs; braces, and parallel rods with cloth floor, and lastly nailing or wiring the fragments together. Most authors prefer the Hodgins splint, which I take for granted all doctors are familiar with. Personally, about all that is needed, is a Hodgins splint, homemade, an old automobile inner tube, a spool or small iron pulley, a hammer, nails and handsaw. With these you can make your patient as comfortable and accomplish as much as you can with all the bought rigging in the world. When the limb is properly elevated and has sufficient traction to overcome shortening, the patient can use a bed rest, can be handled easily, and really made quite comfortable. I do not think it is wise or desirable to go through any formal setting of the limb, especially with old people. With all gentleness put on carefully your adhesive plaster, guarding against cutting about the heel tendon or pressure about the maleoli; put on your Hodgins splint, then suspend the limb to a comfortable height; stick pads about the trochanter, knee and ankle, to overcome the external rotation; raise the foot of the bed about six inches, placing it in such position that the suspending cords will lie somewhat distal to the knee and about 22½ degrees from the median line of the body. Now you are ready for traction which must be sufficient to overcome the shortening.

Traction must be kept up for four to six weeks, and then a plaster cast from the ribs to and including the foot applied and the patient put on crutches for another six weeks. After this time the patient should have massage, active and passive motion of his joints, but not allowed to bear weight for another

*Read before the Second Annual Meeting of The Florida Railway Surgeons' Association, at Pensacola, May 9, 1921.

ten to twelve weeks. I have seen early weight-bearing cause shortening of limbs that appeared the proper length when discharged from treatment. There will be a certain number of failures in spite of all you may do. You will also observe a few people who have never had any treatment that have fairly useful limbs.

(c) Separation of the epiphysis.

This condition is not common and I should think treatment would be about the same as for the neck.

(d) Fractures of the great trochanter are very uncommon. Treatment consists in immobilization, preferably with the limb abducted and rotated outward.

(e) Fracture of the trochanter minor are not frequent. The treatment is rest in bed with limb supported in partial flexion of hip and knee.

Fracture of the Shaft.

Included under this head are all fractures from beneath the trochanter to the condyles. You may have any variety or combination of fractures. However, the oblique is the more common, and this obliquity runs from behind, forward and outward in the upper third, and in the middle third, forward and downward. The displacement of the fragments is fairly uniform, by the action of the glutei and psoas muscles, and the lower fragment is drawn to it. This produces angulation and shortening, and the weight of the leg and foot produces external rotation where there is no interlocking. The same condition is found in the middle third but to a lesser degree. The position of the fragments in the lower third is different, the lower fragment is drawn backward by the pull of the gastrocnemius. Here the upper fragment frequently spears the quadriceps muscles and is very difficult to disengage. Fractures of this portion are often quite serious on account of the danger to blood and nerve supply by the posterior projecting lower fragment. Deaths have been reported from hemorrhage and gangrene. Transverse fracture is more common in children.

Treatment to succeed must take into consideration the following factors: the nature of the fracture, the relation of the fragments, and deforming agents—the muscles. It can be said that as a general proposition all oblique and spiral fractures can be kept in such position that good union with some shortening and good function will result. I do not believe that once the ends of the bones are entirely separated and displaced that shortening can be prevented without an open operation. Transverse fractures are bugbears. I have never been able to get the fragments in apposition. The strongest traction and countertraction will not do it. Warbasse and Hessert think it well-nigh impossible without open operation and sometimes the ends of the bone have to be sawn off. However, with all this difficulty and poor result from the X-ray standpoint, good function with only moderate shortening is common with appropriate treatment. There are many kinds of device for treatment. The Hodgins or Thomas splint or some of their modifications are perhaps the best till some union has taken place, and then nothing is better than a plaster cast. Specific indications for the upper and middle thirds are elevation, abduction and traction of the lower fragment in such manner as to bring it in line with the upper. This can be well done with the Hodgins splint, or with one of parallel bars and a collar for the crotch. In the latter traction is made by adhesive plaster applied to the whole leg including the lower fragment and fastened to the crosspiece at the foot, and countertraction by the collar against the crotch and gluteal muscles. The distal fragment must be supported in such way as to prevent internal or external rotation. Any amount of traction can be made with the last device. The only limit is the patient's ability to bear the pain of the collar pressure. The desired elevation can be had by swinging the leg up in coil spring or automobile inner tube. With careful padding of the collar and close attention to cleanliness, the rigging is very satisfactory. With any kind of device, eternal vigilance is the *sine qua non*.

In fractures of the lower third the Hodgins splint is especially indicated on account of the provision for flexion at the knee. Traction by adhesive plaster is rather limited because of the small surface for attachment. However, this can be overcome by putting the elevation staple far in advance of the fracture and allow the body weight as a counterpull. By this combination sufficient traction can be made. It is not necessary to have abduction in this case, but as a matter of comfort it is desirable.

Before adjusting any of these devices I attempt a formal reduction under anesthesia, except in the aged and in those badly shocked. The greatest gentleness should be practiced in attempting reduction in the lower third on account of the nearness of important vessels and nerves, and consequent danger of wounding them.

Fractures of the shaft in children under ten years of age are very successfully treated by vertical suspension. The usual method is to suspend by both legs, with splints about the injured one. I do not think it at all necessary to suspend by both legs. By using both legs you lessen the amount of body counter-traction on the injured one. I have had splendid results by suspending only the injured leg. The amount of weight necessary is estimated by noticing that the buttock on the injured side just clears the bed. It is surprising how much movements the child can engage in and still have rapid and satisfactory union.

In adults I do not think it safe to allow weight bearing till after twelve weeks.

Fractures of the Lower End of the Femur.

(a) Intercondylar fractures.

"In these fractures both condyles are separated from the shaft and each other, the line being T- or Y-shaped." This is a very serious fracture and the mortality is high compared to fractures generally. This is due to the frequent injury of the vessels and nerves of the popliteal space. Amputations are quite often necessary for the same reason. Treatment is mainly one of reduction and attention to the possible injuries to vessels and nerves. The fragments are not hard to keep in place. Hodgins splint is perhaps one of the best devices.

(b) Separation of the epiphysis.

This is relatively frequent and quite serious on account of the frequent injury to the vessels and nerves and infection from open wounds. "The most common displacement is forward, and to one side, usually the inner." The knee joint is not often injured. Treatment is reduction and immobilization. However, it is often necessary to do an open operation for reduction. Amputation sometimes becomes necessary.

(c) Fracture of either condyle.

This is evidently not so common, but stated by Stimson. The outcome has been quite variable, some getting well easily and others resulting fatally on account of infection of the joint. Treatment consists in reducing the fragment and holding the leg in such position as will maintain it.

(d) Fracture of internal epicondyle.

This appears to be rare, only a few cases having been reported. There was no mention of treatment adopted.

(e) Fracture of the external tuberosity.

Stimson reports one case. No treatment is mentioned.

Swelling and stiffness of the knee is common in the treatment of fractures of the femur aside from those in the vicinity of the joint. The cause is not known. Stiffness results in some indicating a true arithritis. From the cases I have seen I am inclined to think it due to traction and immobilization.

I would urge caution in applying your devices of whatever kind, to watch the heel tendon. You can easily get a pressure sore that is refractory to treatment and very disabling.

I wish to state here that in preparing this paper I have taken largely from Stimson's book on fractures, in places almost taking whole paragraphs. However, in discussing treatment of the neck and shaft I have used largely my own ideas, as developed by observation and practical handling of these fractures. I have said practically nothing about

open operations as I have had no experience to speak of with this method of treatment, having been deterred by the disasters of some of my friends whom I think are competent to do this kind of work.

CASE RECORDS.*

(ANTE-MORTEM AND POST-MORTEM) AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES AT THE MASSACHUSETTS GENERAL HOSPITAL

EDITED FOR THE USE OF PRACTITIONERS BY

RICHARD C. CABOT, M. D., AND HUGH CABOT, M. D.

F. M. PAINTER, ASSISTANT EDITOR

CASE 6511.

A salesman of thirty-seven, born in Italy of a Syrian mother, entered September 7, 1920. His imperfect English made a satisfactory history impossible.

F. H. Good as far as known.

P. H. Negative except for occasional headaches and urination once at night. Best weight 220 pounds, five months ago. Three months ago 140 pounds, at present 160.

Habits. Four years ago he frequently drank ten bottles of beer a day. He had used no alcohol for four months.

P. I. Six months ago he felt perfectly well. His illness began with tremor and great weakness, followed by enlargement of the neck. Five months ago the left thyroid artery was ligated (?) at a hospital without relief. For five months he had had diarrhea, profuse sweating, palpitation, dyspnea and cough. Beginning two and a half months ago he was treated for two months by X-ray with great relief of symptoms. At entrance he again felt ill.

P. E. Well nourished. Weight 143 pounds. Height 5 feet 10 inches. Numerous scars on shins. A circular area the size of a silver dollar over each lobe of the thyroid, probably burns, and a linear scar 5 cm. long over the left lobe. Great and bilaterally equal enlargement of lobes and isthmus of thyroid. Bruit and thrill over both. Pyorrhea. Tongue protruded with fine tremor. Both jugular veins prominent. *Lungs* clear. Apex impulse of *heart* diffuse. Action rapid. Sounds muscular at apex. P2 greater than A2. Pulses and artery walls normal. Systolic B. P. 120, diastolic 65. *Abdomen* and *genitals* negative. *Extremities.* Fine tremor of hands and fingers. *Pupils* slightly irregular, otherwise normal. *Reflexes* normal.

T. 98.8°-102° until September 14, then normal for a week except for a drop to 97.1° September 17 and one to 97° September 21. September 23-24, 96°-100°. *P.* 88-153 and *R.* 25-47 until a terminal rise to *T.* 101.9°-104.1°, *P.* 122-160, and *R.* 29-60. *Urine.* Amount normal. Sp. gr. 1010-1022. Cloudy at two of three examinations, alkaline at the last. Rare leucocytes at all. *Blood* normal. *Wassermann* negative. *Sputum.* Gram-positive diplococci prominent, also many Gram-negative bacilli. Two *X-rays* of the chest negative. *Metabolism* +79%. "This result is of little if any value. He will not co-operate at all and does not understand."

The patient was given the usual hospital diet with fluids *ad. lib.*, codein gr. ¼ and veronal gr. x the night of entrance. He was very excitable, and disturbed the whole ward. Hypnotics were given daily in increasing amounts,—veronal gr. x, chloral hydrate gr. x-xxx, morphia gr. 1-6, trional gr. x, triple bromides gr. xxx. With the temperature of the first week he had slight cough and a few coarse rales in the chest. Action was delayed awaiting a response to an inquiry sent to the hospital where the first operation is said to have been done. The answer, received September 23, stated that he had never been a patient there. That day and the next the patient became much worse, got out of bed ten or fifteen times and did not keep still a minute. The morning of the 24th he became violent and thought a hundred people were trying to cut his throat. The pulse was 160-180. Two doses of morphia gr. 1-6 and one of gr. ¼ were necessary to quiet him. Dr. C. A. Porter saw him that day and advised forcing fluids and pushing hypnotics. On the

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25th ℥ 90 of fluid was given, and hyoscin gr. 1/100, an ice bag to the neck, axilla and precordia for an hour every other hour, rectal glucose 5% ℥ 13 every four hours, triple bromides gr. xxx every two hours, paraldehyde ℥ i per rectum, chloral hydrate gr. xx and four doses of morphia gr. ¼. Chloral hydrate, morphia and paraldehyde were continued the following days. September 27 he died.

Case 6511.

DISCUSSION.

By Dr. Richard C. Cabot.

Notes on the Record.

Eighty pounds is a big drop in weight. Six months ago, apparently, he began to lose weight.

I do not know what "muscular" heart sounds means. Ordinarily in the condition which I imagine we all think this is the heart sounds are very loud. We should not expect them to be muffled, but rather extra clear, as if the man had been running or was greatly excited. That is what we hear in this condition ordinarily.

Nothing is said here about exopthalmos. I suppose they did not notice any. We should expect him to have it with all the rest that he had.

Differential Diagnosis.

That is a perfectly straight history, the sort of thing in which if we found ourselves wrong at the necropsy we should be greatly shaken in our general diagnostic confidence. It is a perfectly straight, typical textbook case of hyperthyroidism.

Necropsy should show (1) a persistence of the thymus gland beyond what it should be at his age, and (2) an adenoma of the thyroid. Beyond that we are not sure of anything at necropsy. The heart may or may not show hypertrophy. There is nothing constant about that in this length of time.

One of the interesting things in this case is the acuteness of its course in the six months before entrance.

Nobody can say that we are therapeutic nihilists at this hospital. We were doing our job here in giving drugs.

The striking feature about this, in contrast with many hyperthyroid cases, is the prominence of cerebral symptoms. We may have almost any type and any degree of psychosis, chronic insanity, or acute delirium in hyperthyroidism. It is one of the best examples of a mental disturbance clearly dependent on auto-intoxication. This is one of the very few cases where we have solid evidence of it.

Shall we find pneumonia? He had temperature, and rales in his chest. But I see no reason to suppose pneumonia. He could have temperature from thyroid alone. It is one of the best examples of purely toxic temperature. He could have rales from weak heart action. Nothing in any way conclusive is put down about the sputum. He may have had a bronchopneumonia, but I see no reason to assume it.

Clinical Diagnosis
(from hospital record.)

Thyrotoxicosis.

Dr. Richard C. Cabot's Diagnosis.

Hyperthyroidism.
Persistent thymus.
Hypertrophy of the heart?
Passive congestion of the lungs.

Anatomical Diagnosis.

1. Primary fatal lesion.
 Hypertrophy of the thyroid gland, possibly carcinomatous.
2. Secondary or terminal lesions.
 Status lymphaticus.
 Slight hypertrophy and dilatation of the heart.
 Acute passive congestion of the lungs.
 Focal pneumonia.
 Congestion of the liver, spleen and kidneys.
 Wet brain.

Dr. Richardson: The brain in this case presented no lesions. It was a wet brain, however, with some edema of the pia.

At the time of necropsy there was nothing noticeable about the eyes.

The thyroid gland showed marked hypertrophy. The thymus gland was hypertrophied, weighing 27 grams. The microscopical examination of the thyroid shows questionable malignancy. There were no metastases.

The heart was slightly enlarged, weighed 430 grams, normally (200-300) with negative valves. The circulatory apparatus elsewhere was negative.

The liver, spleen and kidneys were negative. They showed some congestion. There was a little focal pneumonia.

A PHYSICIAN: What should the thymus weigh at this age?

DR. RICHARDSON: Nothing. We should not find it.

DR. CABOT: There are two points I should like to call attention to. First, the point just brought out, that we ought to find a big thymus in these cases. A big thymus is as prominent a pathological finding as the thyroid. That has led to speculation as to whether the good done by X-ray is not fully as much due to action upon the thymus as upon the thyroid. Also the speculation as to whether the thyroid itself would ever give us toxic symptoms. We have people with just as big thyroids but with no symptoms of toxicity,—what we call non-toxic goitres. Is it not possible that the people with toxic symptoms are really thymus cases? Until we know more about the thymus and the thyroid these questions remain unanswered.

This is a pretty example of a purely toxic death, with delirium, fever, and respirations to sixty. He died a chemical death, and the old type of medical examiner would have had to say the cause of death was not found.

DR. RICHARDSON: He would not, but he ought to.

DR. CABOT: We used to say the cause of death must be an anatomical cause. We are more and more getting over that opinion, and my own belief is that with the progress of medical knowledge we shall find less and less reason to believe that people die anatomical deaths, and that in heart disease, kidney disease, and so on they really die chemical deaths. The progress is away from anatomy and towards chemistry.

PROPAGANDA FOR REFORM.

MORE MISBRANDED NOSTRUMS.—The following preparations have been the subject of prosecution by the federal authorities charged with the enforcement of the Food and Drugs Act, chiefly because the curative claims made for them were unwarranted: Hoffman's Celebrated Mixture (Solomons Co.), essentially an alcoholic solution of copaiba and opium. Aspironal (Aspironal Laboratories), essentially a solution of sodium salicylate, cascara, a small amount of mydriatic alkaloids and a trace of menthol. Lozon Pills (Lafayette Co.), consisting essentially of ferrous carbonate, nux vomica, damiana, arsenic and a laxative plant drug. La Nobleza and Sin Igual (Juan Gandara), the first, a solution containing plant extractives, including saponin (sarsaparilla), a plant laxative, sugar, alcohol, water and traces of alkaloids; the second, a watery solution containing gum, a plant laxative, licorice, and faint traces of alkaloids. Silverstone's Internal Remedy (H. Planten & Son), capsules containing resins and volatile oils, including copaiba and cubebs. Yellow Pine Compound (Yellow Pine Extract Co.), consisting of turpentine mixed with magnesium oxid and a small amount of jalap. Thomas Emmegegogue Pills (Palestine Drug Co.), consisting essentially of ferrous sulphate, aloes and an unidentified alkaloid. Nyal's Prescription "23" and Nyal's Prescription "23" Pills (Nyal Co.), the first, a liquid consisting essentially of zinc sulphate, boric acid, Golden Seal, glycerine and water; the second, consisting essentially of ferrous sulphate, copaiba balsam, oleoresin of cubebs and alkaloidal material. (*Jour. A. M. A.*, Aug. 6, 1921, p. 481).

MODE OF ACTION OF SOME COMMON LAXATIVES.—Calomel has been currently repre-

sented to act by promoting the secretion and retarding absorption, so that an accumulation of the abundant fluid and the consequent evacuation of the semisolid contents ensues. However, a recent investigation in the Pharmacologic Institute in the University at Utrecht by Van der Willigen indicates that absorption in the gastro-intestinal canal is not interfered with in the presence of calomel, and that the drug functions by promoting more vigorous movements of the small and large intestine whereby the contents are propelled so rapidly toward the rectum that absorption and the production of formed stools cannot take place. Similarly, Van der Willigen found that phenolphthalein does not retard absorption nor produce secretions in undue quantities, but acts by promoting peristalsis so that the fluid contents are driven into the proximal colon more rapidly than under normal circumstances. It has been claimed that the laxative action of sulphur is due to the formation of sulphurous acid, which causes irritation of the bowels. In contrast with this is the finding of hydrogen sulphid in the lower small intestine and upper large bowel after the ingestion of sulphur. Van der Willigen believes that ordinarily the chyme which discharges from the small intestine into the colon is soon concentrated there by the rapid absorption of water, but that when hydrogen sulphid is formed from the ingestion of sulphur, it promotes the more rapid passage of the semifluid contents beyond the colon, so that the usual concentration cannot take place. (*Jour. A. M. A.*, Aug. 6, 1921, p. 468).

Distribution of Vitamins.—Our knowledge of the accessory food factors, commonly spoken of as vitamins, is so recent, and the exact nature of these factors so enveloped in mystery, that it was inevitable that the public's lack of knowledge on the subject should be capitalized. It, therefore, is not surprising that there are on the market a number of "patent medicines" that are sold under the claim that they are rich in vitamins, although their exploiters fail to explain which, if any, of the three food factors their products contain. The renaissance of yeast as a therapeutic agent has given an opportunity to the manufacturers of this product of unduly stressing the fact that yeast is rich in antineuritic vitamin (water soluble B). Because milk and certain milk products are rich in the fat soluble A factor, the dairy interests would apparently have the public believe that this particular vitamin is to be obtained only from their products. The truth is, that the accessory food factors are so well distributed throughout the dietary of modern man that, generally speaking, the individual who uses ordinary judgment in selecting his food is in no danger of suffering from a deficiency of any of these three factors. (*Jour. A. M. A.*, Aug. 13, 1921, p. 561).

Iodinol, an "Intensified Iodin" at an Intensified Price.—The A. M. A. Chemical Labarotary reports that Iodinol is put out by the Toledo Pharmacal Co. (price to physicians one dollar a pint), with the statement that it is "a water solution of organic iodin containing one grain of the element in each fluid drachm." It is referred to as "intensified iodin" (whatever that may mean), but no information is offered concerning the nature of the "organic iodin" compound in Iodinol. The Laboratory found that the iodin in Iodinol was present as iodid or in a form which readily yields iodid, and the preparation cannot be considered as being an "organic iodin" preparation, either from the chemical or therapeutic point of view. Instead, it appears to be an iodo-tannic preparation, probably similar to the iodo-tannic syrup of the French Pharmacopoeia. While a correspondent claimed that Iodinol was a relatively cheap way to dispense iodin for internal use, it has no advantage over a simple solution of potassium iodid or sodium iodid, and is about fourteen times more expensive. Iodinol is to be condemned because it is secret in composition and is sold under exaggerated, unwarranted and un-

truthful claims. (*Jour. A. M. A.*, Aug. 20, 1921, p. 637).

Bacillus Acidophilus.—Metchnikoff, who believed that poisons of putrefactive origin were detrimental to human well-being, attempted to modify the intestinal flora by the administration of viable lactic acid bacilli in the form of Bacillus bulgaricus. The best scientific evidence indicates, however, that this bacillus is incapable of accommodating itself to intestinal conditions. On the other hand, it has been shown that a related bacillus, Bacillus acidophilus, which is actually of intestinal derivation, lends itself to implantation in the intestinal canal. Further, abundant growth of this bacillus may be secured by appropriate change in the diet, namely, by the administration of lactose (milk sugar) and dextrins. That this change in the flora may thus be produced is explained by the normal presence, though in small number, of B. acidophilus in the intestine which requires only the stimulus of a favorable medium. Whether there are special conditions under which the implantation of Bacillus acidophilus is beneficial remains to be learned, and the findings should not be hastily translated into a new sour-milk cult. (*Jour. A. M. A.*, Aug. 20, 1921, p. 626).

The Schick Test.—The Shick test for determining the degree of immunity to diphtheria is no longer a novelty. Many of those giving a positive reaction have been successfully immunized in the face of impending danger. Park, of the New York Board of Health, asserts that a negative Schick test in cases in which there is active immunity, either natural or acquired, when the toxin used and the technic employed have been suitable, gives an almost complete security from diphtheritic disease, not only for the immediate time but also for the future. (*Jour. A. M. A.*, Aug. 27, 1921, p. 708).

More Misbranded Nostrums.—The following proprietary preparations have been the subject of prosecution by the federal authorities charged with the enforcement of the Food and Drugs Act, chiefly because the therapeutic claims made for them were held false: Tonoline Tablets (American Drug Sales Co.), consisting essentially of nux vomica, alkaloids and ferrous iron, and claimed to be valuable for "debilitating diseases of men" and "nervous prostration in women." Antifebrom (Dr. John Chmiell Co.), containing iron, quinin and styrchnin, claimed to remove all kinds of stomach ailment. Regilaterro No. 1 (Dr. John Chmiell Co.), a water-alcohol solution of aloes, said to be effective in preventing smallpox and effective against rheumatism, kidney troubles, dyspepsia and stomach disorders. Lekarstwo Na Szkorbut (Dr. John Chmiell Co.), a syrup containing a little alum and copper sulphate, and represented as a cure for scurvy. Lekarstwo przeciw Pijanstwu (Dr. John Chmiell Co.), powdered ipecac with sodium bromid and a small amount of an ammonium salt, and represented as a cure for the drink habit. Krople Bobrowe (Dr. John Chmiell Co.), a liquid containing strychnin, iron, lime and magnesium in combination with sulphuric, citric and phosphoric acid, and claimed to be effective for all sorts of feminine ailments. Krople Maciczne (Dr. John Chmiell Co.), a mixture of alcohol, ether and water containing laxative drugs and represented as effective as a womb remedy and a cure for rheumatism. Gardolek (Dr. John Chmiell Co.), a solution containing boric acid, menthol and thymol, claimed to be an effective remedy for diphtheria. Krople Nazemcowe (Dr. John Chmiell Co.), a solution containing a laxative drug, gentian and capsicum, represented as an effective remedy for pains in the stomach caused by diarrhea and as a remedy for faintness. Krople Laurowe (Dr. John Chmiell Co.), an extract of bitter almond, sold as a remedy for heart troubles. Vitalitas (Vital Remedies Co.), essentially a solution of sulphate of iron and aluminum with traces of other salts, claimed to be useful in the treatment of rheumatism, chronic indigestion and other affections. Red Cross

Tansy Pills (Norman Lichty Mfg. Co.), essentially aloes and ferrous sulphate offered for the regulation of female complaints. Claes Tilly Genuine Medicamentum (Claes Tilly, Inc.), a sulphurated vegetable oil mixed with turpentine and perhaps oil of amber, and represented as a remedy for bladder, kidney and liver disorders and other conditions. Howe's Compound Damiana Tablets (Howe Medicine Co.), consisting essentially of phosphorus and extractives of damiana and nux vomica, and offered for lost vitality, etc. (*Jour. A. M. A.*, Aug. 27, 1921, p. 722).

Aspirin or Acetylsalicylic Acid.—For many years the Council on Pharmacy and Chemistry, and the Journal of the American Medical Association have been urging physicians to avoid using proprietary names in prescribing drugs obtainable under a nonproprietary name. Two substances have been especially referred to in this connection, hexamethylenamine and acetylsalicylic acid. Many years ago, hexamethylenamine was found to be an effective therapeutic agent, especially as a urinary antiseptic. Since it was a well-known chemical it could not be patented. A commercial firm, however, seized the opportunity and coined the name "urotropin," and advertised it. As a result, the proprietary name became so fixed in the minds of physicians that some still use it in their prescriptions instead of hexamethylenamine. Acetylsalicylic acid was patented and the trade name "Aspirin" coined for it by the predecessors of the Bayer Company. During the patent monopoly, both physicians and the public became familiar with the term Aspirin. When the patent expired, physicians continued to prescribe Aspirin, even though the drug was available under its proper name, acetylsalicylic acid. Having acquired the rights to Aspirin, the Sterling Products Company, under the name of "The Bayer Co.," has during recent years attempted to impress on the lay mind that there is no satisfactory Aspirin except Aspirin-Bayer. Recently a suit has been decided in which the Bayer Company sought to restrain the United Drug Company from selling acetylsalicylic acid under the name Aspirin. The court holds that, since the public knows the drug as Aspirin only, the pharmacist may sell any brand of acetylsalicylic acid to the public when Aspirin is called for. On the other hand, manufacturers, pharmacists and physicians know the term acetylsalicylic acid and know that the term Aspirin was coined by the Bayer concern, and hence, when a physician writes for Aspirin in his prescription only the Bayer product may be supplied. Physicians should avoid the term "Aspirin" and, instead, prescribe "acetylsalicylic acid." (*Jour. A. M. A.*, May 14, 1921, p. 1356).

More Misbranded Nostrums.—The following products have been the subject of prosecution by the federal authorities charged with the enforcement of the Food and Drugs Act, chiefly because the claims advanced for them were held to be false: Murphey's Second Summer Remedy (Murphey Medicine Co., Inc.), an emulsion containing alcohol, sugar, castor oil, plant material and traces of peppermint oil and morphin. Ludlum's Paste (Williams Manufacturing Company), consisting of copaiba, cubebs and oil of sassafras in a fatty base. Prickly Ash, Poke Root and Stillingia Compound with Iodids (Allan-Pfeiffer Chemical Company), consisting of plant extractives, including a laxative drug, potassium iodid, alcohol, sugar and water. Gauvin's Cough Syrup (J. A. E. Gauvin), consisting essentially of extractives of wild cherry bark, spruce gum, sugar, alcohol and water. Meyer's Red Diamond Kidney Tablets and Compound Extract of Sarsaparilla with Iodid of Potassium (Meyer Drug Company), the first containing salts of benzoic and boric acids, atropin and vegetable extractives, the second consisting essentially of a syrup containing caramel, vegetable extractives, with small amounts of potassium iodid, ferric chlorid and alcohol. Leonard Ear Oil (A. O. Leonard), consisting essentially of camphor, oil

of eucalyptus, and traces of alkaloids in a base of liquid petrolatum. (*Jour. A. M. A.*, May 21, 1921, p. 1417).

Eruption After Luminal.—Luminal has been reported by two authors as producing an exanthem simulating urticaria; by two others, an eruption simulating measles; by three, as simulating scarlet fever; and by two, as an unclassified drug eruption. (*Jour. A. M. A.*, May 28, 1921, p. 1517).

Tekarkin. — Many physicians have received a sixteen-page pamphlet, *Therapeutic Leaves*. *Therapeutic Leaves* purports to be a periodical, published as "a medium for the dissemination of knowledge pertaining to therapeusis." Actually, it is an advertising medium dealing with the products of the National Bio-Chemical Laboratory, "Osmo-Calcic Solution," "Tekarkin" and "Osmotic Mangano-Potassic solution." These three preparations are said to be the formulas of Edward Percy Robinson, who lives in Mount Vernon, N. Y., and has an office in New York City. They are used by Dr. Robinson in the treatment of cancer. A package containing about 65 minims of Tekarkin and one ounce each of the other preparations sells for $10. Most of the material in *Therapeutic Leaves* is a rehash of four papers published by Edward Percy Robinson in *The New York Medical Record*. In these Robinson advanced the theory that cancer is caused by an excess of sodium chlorid in the blood and tissues, and that it can be cured by administering a solution of potassium nitrate. However, "Home-made solutions," says Dr. Robinson, "are apt to be disappointing," and hence a solution of this chemical is sold as Tekarkin. This dilute potassium nitrate solution sells at the rate of $67 an ounce. At one time Dr. Robinson specialized in "facial contouring." Except for the articles that have been published in *The Medical Record*, literature does not indicate that Edward Percy Robinson can lay claim to special knowledge of, or skill in, the treatment of cancer. (*Jour. A. M. A.*, May 28, 1921, p. 1514).

Vaccination Against Influenza.—Prophylactic vaccination against influenza was practiced extensively during, but mostly following, the recent epidemic of the disease. In some districts stock cultures were employed; in others a culture of the strain or strains isolated during the epidemic, and in still others a mixed vaccine. McCoy presented his impression, as gained from the uncontrolled use of these vaccines, that while therapeutically they might be of value in the prevention of influenza, yet in every case in which they were tried under perfectly controlled conditions, they failed to influence either morbidity or mortality. In an elaborate study, Jordan and Sharp conducted observations on approximately six thousand persons. About one-half of these were vaccinated with a saline suspension of a standardized mixed vaccine; the remaining half were not vaccinated. The influenza attacks among the vaccinated numbered 4.1 per cent; among the unvaccinated the morbidity from this disease was 4.8 per cent. (*Jour. A. M. A.*, May 28, 1921, p. 1503).

Coagulin-Ciba Omitted from New and Nonofficial Remedies.—Coagulin-Ciba was admitted to New and Nonofficial Remedies in 1915. It is stated to be an extract prepared from blood platelets and to contain thromboplastic substances mixed with lactose. Extensive clinical reports appeared to justify its acceptance for New and Nonofficial Remedies. However, in 1918, Dr. Arthur D. Hirschfelder reported to the Council that a number of specimens of Coagulin-Ciba failed to accelerate the coagulation time of blood. The results of Dr. Hirschfelder were subsequently confirmed by Dr. P. J. Hanzlik, who made an extensive investigation of the effects of Coagulin-Ciba at the invitation of the Council's Therapeutic Research Committee. Since the evidence indicates that Coagulin-Ciba has little efficacy, if any, as a hemostatic, the Council directed its omission from New and Nonofficial Remedies. (Abstracted from Reports, Council on Pharmacy and Chemistry, 1920, p. 53).

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WHY FLORIDA CANNOT RECIPROCATE.

From time to time physicians in various sections of the State protest at the action of the Board of Examiners in refusing to enter into reciprocity with other States in the Union having a high standard as requirement for registration and license to practice.

Florida is in a peculiar class all by herself as regards reciprocal relations. The following letter recently addressed to one who violently criticised the action of the Board deals with the situation so thoroughly that THE JOURNAL is glad to present it to our readers:

"Tampa, Fla., Dec. 15, 1921.

"Dear Sir: Replying to your letter of recent date, I beg to state the reasons why our Board does not issue temporary licenses, or license by reciprocity.

"The nearness of our State to the centers of population and the mild climate combining to make it a desirable tourist State, attract a large number of physicians, especially those who wish to commercialize the profession. Florida's unparalleled sea-coast, with its tropical climate and numerous ports, subject her more readily to plagues and tropical diseases than any other section of the country. The burden of responsibility for the health of the people is placed upon the medical profession, which feels it should be permitted to formulate rules and regulations by which it may be enabled to maintain its efficiency.

"The State Board of Medical Examiners could not guarantee this efficiency should it adopt the policy of issuing license by reciprocity, as we find, from our own experience and that of other State Boards, that there are many loopholes for incompetent physicians who seek license to practice in new fields by reciprocity. We find instances where individuals have selected States that through lack of progressiveness or geographical location would give them a license which, in turn, they would utilize as a stepping stone to gain admission to other States,

thus receiving the same benefit and standing as the more reliable physicians who have endured the test of competency. There are also many practitioners who have for years laid aside the study of medicine to follow some other vocation, but would again attempt to practice the modern science they know little of, while enjoying a stay in Florida through the winter months, if permitted to do so by reciprocity.

"There are thirteen hundred registered physicians in the State, which gives us the normal ratio of physicians, and there are over one hundred unregistered ones that are practicing under cover, having entered on fake diplomas and bartered licenses. There have been recorded by my office within the last five years over one thousand requests for temporary licenses, or license by reciprocity. Of these a careful study has been made, and approximately 30 per cent have been found wholly incompetent to practice medicine, many of them being unable to read, write or spell. Are we doing our duty to an unsuspecting public when we give them the stamp of our approval?

"We greatly sympathize with the elder practitioner who has been loyal to the profession and is desirous of continuing his practice in our State without subjecting himself to further examination, but under the present conditions that exist in other States, Florida, with her vast unprotected areas, cannot at the present time open her doors to him without restrictions.

"The Board, being thoroughly aware of the responsibility vested in it, is in sympathy with physicians of other sections who may wish to locate in this State, and are endeavoring to maintain the necessary standard in medicine and at the same time make it as easy as consistent with same by giving a practical examination.

"We also find by having thoroughly tested it out that temporary licenses are not satisfactory to either the applicant or the Board. A single member giving an examination, being cognizant of his responsibility, may appear to the applicant too stringent. Then, too, the expense is to be considered. This has all been rendered unnecessary by our present method, as our examinations are held at stated intervals and are advertised six months to a year ahead of time.

"I am sorry from two standpoints that you view the rules of our Board as you do. First, because you show a lack of confidence and accuse us of selfishness, while we are serving gratis and trying to protect you and yours; second, knowing your aspirations to become a member of the next legislature, I feel our efforts in behalf of better medicine will be jeopardized unless you investigate the conditions more thoroughly.

"In conclusion, I beg to say that your client put up one of the poorest papers I have ever seen during my six years of Board work, having barely passed in two out of ten subjects. I would suggest that you ask him for his grades.

"With my very best wishes, and assuring you of my friendly co-operation, I am,

"Yours most sincerely,

"W. M. Rowlett, *Secretary.*"

REVIEWS FROM CURRENT LITERATURE

CHRONIC NEPHRITIS.

Ringer, A. I., M. D.: "Chronic Nephritis, From the Point of View of the General Practitioner; Its Diagnosis, Prognosis and Treatment." Amer. Jour. Med. Sci., June, 1921, p. 798.

Kidney diseases should be classified according to the character and severity of the disturbance, and not according to anatomic structure as found at autopsy. It is probable that these anatomic differences represent different stages of progress in the disease. The rational classification is based on water and salt excretion, nitrogen excretion and pthalein output.

The author conceives that chronic nephritis is due to essential weakness in kidney structure, and that the commonly ac-

cepted causes act in a secondary role as excitants. It is the function of the kidneys to maintain in the blood a normal concentration of its constitutuents, to excrete these when they are in excess and to refuse to excrete them when the blood concentration is below normal. It is, therefore, the function of the kidneys to keep the blood in a normal state of purity.

The glomeruli and loops of Henle are lined with flat endothelial cells, and excrete water and salt. The convoluted tubules are lined with epithelial cells of the type found in all secreting glands, and the tubules excrete nitrogenous products. Disturbance in glomerular function is followed by decrease in elimination of water and salt with an accumulation of water in the tissues; the products of protein metabolism are excreted normally. Disturbances in the tubular portion of the kidney interfere with the elimination of nitrogenous products, namely, urea, uric acid and creatinine; while water and salt may be excreted perfectly. This distinction holds with all cases of nephritis in their early stages. The tubular type is by far the most common.

The amount of kidney tissue possessed by any individual is much greater than his physiologic requirements. There are no subjective symptoms, and there may be no objective symptoms for a long time after disturbance in the kidney function has set in. All the symptoms of nephritis are symptoms of deficiency in kidney function.

Group A. Members of this group show slight elevation of blood-pressure, 140 to 180 systolic and 75 to 80 diastolic. There may or may not be small traces of albumin and a few casts in the urine. Urinary output is normal. Elimination of nitrogen and chlorides is normal, and all the functional tests are normal. There are no subjective symptoms, and objective symptoms may not always be present.

Group B. These cases show some subjective symptoms, such as tired feeling, lack of energy, dizziness, slight shortness of breath and palpitation of the heart on exertion. The findings are the same as in group A, except that the blood-pressure may be higher and there may be hypertrophy of the left ventricle. The urine may show fairly large amounts of albumin, and a few casts; the greater majority have only a small trace, or none at all. The functional tests are normal; the blood is normal.

Group C. This comprises the majority of the cases. Most of the symptoms are referable to the cardiovascular system. They have frequent headaches, dizziness, palpitation of the heart and shortness of breath on the slightest exertion, dark spots in front of the eyes, insomnia, anorexia, edema of the legs, puffiness under the eyes, ringing in the ears, pain in the precordium, etc. On examination, these patients are found to have systolic blood-pressure from 180 to 280 and diastolic from 80 to 150. Most of them show a good myocardium with hypertrophied left ventricle, but a number show evidences of cardiac insufficiency and failing myocardium.

Group D. These cases show unmistakable signs of kidney deficiency or decompensation. It may be water and salt elimination with edema, poor phthalein elimination or retention of nitrogenous products in the blood. They show signs of intoxication of varying severity, and are mostly bedridden. They may have anorexia and vomiting and all kinds of complications in the cardiovascular system. The nervous symptoms vary from severe headaches, insomnia, retinitis, diplopia and temporary blindness to full-fledged attacks of irrationality, convulsions and coma. The urine shows large amounts of albumin and casts. The quantity or urinary output may vary, and depends largely upon the degree of cardiac complication.

The diagnosis of chronic nephritis may rest upon urinary findings or upon high blood-pressure, cardiac hypertrophy, arteriosclerosis, retinitis, etc. Chronic nephritis, high blood-pressure and hypertrophied heart can not be separated from one another. They

are a series of links in a closed chain, forming a complete circle; and at the present stage of our knowledge we are unable to say where the chain begins and where it ends. The author is inclined to consider every case of hypertension as a potential case of chronic nephritis and every case of nephritis a potential case of uremia.

Three functional tests are employed in estimating the severity of nephritis. In the first, the phthalein test, the output should not be less than 35 per cent during the first hour nor less than 20 to 25 during the second hour, giving a total output during the two hours of 55 to 60 per cent. Cases in groups A, B and C give normal phthalein figures. In group D elimination begins to fall behind, and may become nil. If the phthalein output is low in repeated tests, the prognosis is very serious. The second functional test is made by quantitative study of urinary output. The relation of day excretion to night excretion for nitrogen is roughly 3 to 2, and for chlorides it is 3 or 4 to 1. The nocturnal water output is less than 400 c.c. If the kidneys begin to fall behind in their work, the proportion of day to night chloride and nitrogen excretion will tend to approach each other and there will be nocturnal polyuria. The third test for kidney function consists of examining the blood for products of metabolism, which are normally found in very small quantities, and which are found very much increased in cases of renal insufficiency. These are urea, uric acid and creatinin. The normal figures are 3 mg. of uric acid, 20 mg. of urea nitrogen and 2 mg. of creatinin per 100 c.c. of blood. Uric acid is the first to be retained; second, urea nitrogen, which may rise as high ac 150 mg. or more; lastly, creatinin begins to rise. A concentration of creatinin of 5 mg. indicates a hopeless prognosis and imminent death from uremia.

Patients in group A require no medical treatment. They must be instructed in regular habits of life with moderate living and plenty of rest and sleep. There is no necessity for restricting the diet to any great degree. For group B the best treatment for beginning edema or unduly high blood-pressure is a week's rest in bed. The author makes no use of nitrites except in cases showing anginal attacks.

The symptoms of group C affect chiefly the cardiovascular and nervous systems. Treatment is entirely symptomatic. The best remedy is one or two weeks in bed with bromide to the extent of 15 grains three times a day. The diet should be low protein, low salt and low purins, *i. e.*, cut out meat soups, tea and coffee. Cinchophen in 7-grain doses, two or three times a day, is frequently of great benefit for headache and dizziness. Venesection and lumbar puncture bring considerable relief. If there is no evidence of retention of nitrogenous products, meat, poultry and eggs are allowed to such an extent that the urinary nitrogen does not exceed 10 to 12 grams per day. These patients must be warned against constipation, gastric disturbances with vomiting, and colds. Cardiac complications are very common. Uremia can not be diagnosed on the basis of clinical symptoms, but only on the basis of the blood findings. There must be a marked increase in the retention of uric acid, urea and creatinin in the blood to support the diagnosis. There is no benefit to be gained by the use of diuretics. When scanty urine is due to cardiac decompensation, diuretin has a marvelous effect.

Group D. The patient in this group must be kept on a very low protein level commensurate with his ability to excrete nitrogen. A salt-free diet and restricted water intake are absolutely essential, if the patient has difficulty with water and salt elimination with edema as a prominent feature. The use of diuretics is contra-indicated. Frequent purgation by magnesia is of great value. Hot packs, hot-air baths or electric baths are good remedies. On the whole, edematous patients are comfortable and do

not have any of the violent symptoms we meet in the uremics. They usually die of secondary cardiac embarrassment or edema of the lungs. The patients who have difficulty with nitrogen elimination usually run a stormy career, with violent headaches, nausea and vomiting, and nervous symptoms varying from restlessness, insomnia to irrationality and coma.

Bromides, chloral hydrate, cinchophen, and sodium salicylate are useful. Venesection and lumbar puncture are of great value. Sweating and purgation are also of great value. Treatment of uremia at best is hopeless.

PUBLISHER'S NOTE

NEW LABORATORIES FOR ABBOTT'S.

A substantial group of eight concrete buildings in North Chicago looms as evidence of the growth that is said to follow true service.

When the war cut off the import of medicinal chemicals used quite generally by physicians in this country, the Abbott Laboratories were among the first to provide for the urgent home demands. Such drugs as barbital, procaine and cinchophen were produced in this period by its chemists under license from the Federal Trade Commission. Since that time there has been a continuously increasing demand for these and other high-grade synthetics, under the Abbott label, necessitating an enlargement of manufacturing space and facilities.

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ORIGINAL ARTICLES

EARLY DIAGNOSIS OF CARCINOMA OF THE CERVIX.*

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Carcinoma of the cervix has been given more attention by the gynaecologists than any other disease coming within their field. Unfortunately, though, most of their energies have been directed toward perfecting an operating technique instead of the more important problem of making an early diagnosis. As experience has taught us, without an early diagnosis the most astute surgeon is helpless in promising his unfortunate client a favorable prognosis. It is with regret that we are confronted with the sad admission that so little has been accomplished within the last decade in the early diagnosis of cancer of the cervix. While it is true that the specialists have made advances along this line, the effect has not been far-reaching. The gynaecologist is not unlike any other specialist, inasmuch as the vast majority of patients come to him after the family physician has failed to relieve them, and not until we have taught the general practitioner who sees these patients first the importance of a thorough examination and early diagnosis of the disease, that they may be operated upon in time, will we progress and accomplish our desire. To do this, we must first impress upon the family physician (especially the country practitioner who, on account of his inadequate equipment, is prone to neglect his examinations), his responsibility along these lines. Second, the education of the laity by the physicians regarding the importance of an early diagnosis of cancer, and a careful supervision over them regarding their sexual organs during the cancer period, which appears most commonly between the ages of 40 and 50, although we may encounter it in patients much younger or older. It has been so long taught, and with the average physician possessing the deep-rooted idea that cancer of the uterus only occurs about the time of the menopause, that unless we succeed in disproving this erroneous belief many early cases in young women will continue to be overlooked. Peterson, in a report of 500 cases of carcinoma of the uterus, found 23, or 4.8 per cent, under 30 years of age. In a series of 6,071 cases collected by Koblanck, 33.7 per cent occurred between 30 and 40, and 24 per cent between 30 and 60. It is also a known fact that the growth is much more rapid in the younger than the older individuals. The most trivial complaint, whether it is pain, watery or bloody discharge, irritable bladder or pruritis, should be given the closest kind of investigation to determine the cause of such symptoms. From the histories of the majority of patients coming from the rural districts it is painful to note that many of them have been treated for months by their family physician for so-called "female trouble" without even having had a vaginal examination made, and it will not be until our friend in the country realizes how important this is to his patient himself, and the specialist, can we hope to make any rapid strides in the cure of cervical carcinoma.

Many patients who come to the specialist too late for an operation could have been saved had the physician to whom she had trusted her life made a careful examination early, and convinced himself that she either had a cancer or something radically wrong

*Read by title before the forty-eighth annual meeting of The Florida Medical Association, at Pensacola, May 10, 11, 1921.

with her. One of our foremost gynaecologists once said that "Every patient which gives symptoms referable to the sexual organs during the cancer period of life should be investigated just as carefully as though he believed she had cancer until he proved that she had not." Thus, again I reiterate that early diagnosis is of twofold importance. First, that of the great benefit rendered to patients; second, the saving of the physician of a dubbing and severe criticism at the hands of his patients and their friends by his mismanagement of the case, when the truth, as it will, becomes known. I believe, however, that sometimes unscrupulous specialists take an unkind advantage of their general practitioner friend to protect themselves for the glory of their own reputations. No matter how lofty our motives are, we must not be selfish, but just. Neither can we afford to ignore the more tender sensibilities of the general practitioner who has a right to protect his honest interest. The cause of cancer has not yet been solved, nor is there any evidence of the "facile triumph being near," as Wells points out. "Biologic chemistry has not yet given us any very substantial facts on these problems." The microbiology and the searchers for a cancer parasite have accomplished naught. "Pain," of the Cancer Hospital Research Institute in London, has shown that the clinical features of carcinoma are vastly unlike the inflammation following infection, and that cancer is neither contagious nor infectious.

In studying the histology and pathology of cervical carcinoma, we find two types of the disease, the squamous cell carcinoma, also known as epithelioma, is the most frequent form, arising from the squamous epithelium covering of the vaginal portion of the cervix. It begins with small papilla-like nodules which are hard at the base, but friable on the surface, bleeding with the slightest manipulation. These small papillary projections develop rapidly and form the characteristic cauliflower mass. It is very slow in its extension toward the body of the uterus, and invades the prametium and regional lymph-glands later than the adeno-carcinoma, though it has a greater tendency to invade the vaginal wall and bladder.

The cylindric cell carcinoma, also known as adeno-carcinoma, first manifests itself inside of the cervical canal, originating in the cylindral cells covering the mucous membranes of the cervix. It may begin either in the superficial cells, or in those lining the mucous glands. It frequently develops in the form of tubercules or papillary growth within the lumen of the cervix, involving the entire cervical canal, without any pathological change being observed about the external os, although there is a perceptible thickening and hardening of the cervix. The examination by the curettage usually shows a destruction of the surface epithelium, though when found intact there is a proliferation of cells in tit-like growths. As this advances, the growth undergoes necrosis, and sloughing leaves a crater-like cavity in place of a cervical canal. The ulceration may penetrate the cervical wall and invade the paramentrial connective tissue without, as stated above, any perceptible involvement about the external os. Therefore, this form of cervical cancer is especially treacherous, inasmuch as it may progress to an advanced stage without giving warning of its presence.

On account of carcinoma of the cervix not producing any definite symptoms in its early stage, it makes it a very subtle disease to contend with, and owing to the fact that the first symptoms that do occur are not recognized by the patient or her physician, unfortunately increases its fatality. For this reason, these few cardinal symptoms every physician should have indelibly stamped on his mind. While these may not be present at the onset of the cancer, they are usually sufficient to arouse suspicion and thereby be the means of saving many cases. They are leucorrhea or watery discharge, irritable bladder, pruritis, irregular bleeding, pain, and disagreeable odor. Of these, bleeding, though rather a late sign, I consider the most

important. It may be very slight, only a few drops at stool, exertion, or following coitus. It should always be considered a danger signal, demanding a most careful investigation. This is also true of a profuse watery discharge. The cancer leucorrhea has a characteristic stale, sweetish odor, which later becomes mixed with blood, and the odor becomes more disagreeable, to the extent that it becomes exceedingly distressing to the patient. The cervix is not very sensitive and the pain is usually the result of the invasion of the para-cervical tissue. Though any undue vaginal discharge, bloody or not, demands an investigation, with the idea of cancer being the cause, should upon examination the cervix bleed easily or show any friability, it should be considered malignant, until proven not to be by pathological examination. When every physician awakens to his duty and realizes how important it is to his patient for him to examine her thoroughly, then, and not before, will we have the key to the situation.

In the early diagnosis of carcinoma of the cervix, one should not overlook the fact that it occurs almost exclusively in cervixes that have been traumatized by childbirth. Statistics show that "more than 98 per cent of carcinoma of the cervix occurs in women who have borne children." The greater majority having been multiparous, it does not have the hereditary predisposition as does carcinoma of the breast. The progress in the cervix, it seems, is favored by the scar tissue that forms in an old laceration. There are two theories advanced, one, that following a tear the epithelial cells become included in the submucous tissue, and later in life, when the stroma begins to lose its power of resistance, the cell inclusion begins to grow wild. The second theory is, that the tear of the external os exposes its delicate mucous membrane directly to continual injury, and the mucous that acts as a protection plug now pours directly into the vagina Whichever theory is right, we know that the ectropion-eroded cervix has a special predisposition to cancer.

If a careful history of our patients is taken, we invariably find that the first notice of anything being wrong was a watery bouillon-colored discharge. This is frequently, but not always, soon followed by an irritable bladder, with a frequent desire to urinate, which gives relief. Associated with these two symptoms, we also frequently have the pruritis. Bleeding is no longer considered an early symptom, but rather a late one, the above symptoms developing long before it is observed. Again I say, "the difficulty is to get the profession to place the proper importance on apparently trivial symptoms."

In making an early diagnosis of carcinoma of the cervix, we must differentiate it from erosion, inflamed, lacerated cervix, cystic degeneration, tubercular ulcer, sloughing polypus, and chancre or gumma. Two cases of the last named were recently sent to the John S. Helms Clinic with a tentative diagnosis of carcinoma of the cervix having been made, but, upon further examination, the report of our pathologist was the first, a necrosed myo-fibroma, and the second, which was an ugly, deep-seated ulcer of the posterior cervix, a gumma. This patient gave a four plus Wassermann.

If malignancy is present in its early form, upon diginal examination we usually find in an angle of the lacerated cervix a small nodule, "which can be distinctly felt as a little lump under the examining finger, and entirely different to the touch from any other portion of the cervix. In erosion and plain lacerated cervix, the entire cervix in every place feels exactly the same." Upon inspection, the whole eroded cervix bleeds when touched, while in cancer only the little, hard nodules bleed. We must also be careful and not confuse these nodules with cystic degeneration that sometimes takes place in the cervix. This may be easily determined by punching one of the little bodies with a knife. If it exudes a mucous, that deter-

mines its status. Tubercular ulcerations are so rare, should we find one, we would be justified in suspecting a cancer.

Every suspected case should have a specimen removed for microscopic examination. From the standpoint of diagnosis and record it is of supreme importance. The errors are invariably due to neglecting this important routine. Only a small piece of wedge-shaped tissue from the suspicioned portion is necessary, and it should be placed at once in a 10 per cent formalin solution and sent in a small retainer to the nearest pathologist for a frozen section and examination. It is well to cauterize the site of the removed specimen to prevent transplanting the cancerous cells, should it be malignant. It likewise aids in controlling hemorrhage. For the infiltrating form, specimens can be obtained with a small curette, having the scrapings examined.

THE STATE BOARD OF HEALTH AND ITS BUREAUS.*

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The Constitution of the State of Florida, adopted in 1885, provides for the establishment of a State Board of Health, and of County Boards of Health. It further specifies that "The State Board of Health shall have supervision of all matters relating to public health, with such duties, powers, and responsibilities as may be prescribed by law;" and that "The County Boards of Health shall have such powers, and be under the supervision of the State Board of Health to such extent as the legislature may prescribe."

Under this authority there was established by the legislature in 1889, a State Board of Health, and laws were enacted giving it certain powers and duties. Many of these and others since enacted are now antiquated, although attempts have been made from time to time, with more or less success, to bring them up to date. One of the powers granted by legislation under the general authority of the Constitution, is the promulgation by the State Board of Health of rules and regulations for the control of public health matters. These rules and regulations have the same force and effect as laws enacted by the legislature.

The laws of the state having an applicability to public health matters, and the rules and regulations promulgated by the State Board of Health have been compiled and published in a volume under the title of "Sanitary Code."

The Board.

The State Board of Health is required to be composed of three discreet citizens of the state appointed by the Governor and confirmed by the Senate. Each member holds office for four years and until his successor is appointed and qualified. At the first meeting of the Board a President must be elected from among its members.

The powers and duties of the Board are: To exercise a general supervision over the public health of the state; to prevent the importation and spread of communicable disease; to authorize the institution or operation of quarantine within the state and to modify or abrogate it; to investigate and study cases of disease or epidemics, and the means of prevention; to care for segregation and isolation of persons having communicable disease; to disseminate public health information; to provide treatment in certain indigent cases; to impose upon railroads and navigation companies or individuals owning or operating steamships or other vessels, such restrictions and regulations providing for inspection, quarantine and sanitary rules as may be necessary to protect the public health; to provide for or to require sanitation or disinfection of vehicles of common carriers, camps, prisons, jails, factories, hotels, schools and other places open to or used

*Read before The Florida Midland Medical Society, at St. Petersburg, October 12, 1921.

by the public; to regulate the disposition of garbage and sewage. In addition, the State Board of Health has power to adopt and to enforce rules and regulations to preserve the public health.

State Health Officer.

The State Health Officer is appointed by the State Board of Health and holds his office for a term of four years and until his successor is appointed and qualified. He is the Executive Officer and Secretary of the Board. He is empowered and is responsible for the enforcement of the laws and the rules and regulations for the preservation of the public health, and is in direct authority over the personnel employed by the Department.

For the sake of convenience and efficiency various activities have been delegated to certain bureaus under directors, viz: Bureau of Administration, Bureau of Sanitary Engineering, Bureau of Diagnostic Laboratories, Bureau of Vital Statistics, Bureau of Child Welfare and Bureau of Venereal Diseases.

Bureau of Administration.

This bureau is directly under the State Health Officer as director and has charge of all functions not delegated to one of the other bureaus. The personnel of this bureau consists of the State Health Officer, the Secretary to the State Health Officer, three District Health Officers, the Auditor, the multigraph operator and other unclassified employees.

The Auditor is responsible for the correctness of all bills and the preparation of vouchers, together with their transmission, as well as acting as the bookkeeper of the State Board of Health.

The District Health Officers are the agents or representatives of the State Health Officer in the field. Their chief duties are the making of surveys, the enforcement of health laws and the control of communicable disease. In the performance of the last named duty, the functions applicable are consultations, investigations, diagnoses, reporting, placarding, quarantine and immunizations. The District Health Officer is the agent through which the State Board of Health establishes and maintains contact with other health organizations in the state, the physicians and the general public.

Bureau of Sanitary Engineering.

The Bureau of Sanitary Engineering renders helpful assistance to cities, towns and individuals in solving any engineering problems confronting them having either a direct or indirect effect upon public health. The functions of the bureau and its scope of activities are diversified and widespread. The activities of the bureau may be briefly outlined and enumerated as follows:

1. Control of installation of water supply and sewer systems, including water purification plants and sewage treatment plants. Examination and approval of plans for all such installations.
2. Studies of stream pollution.
3. Intensive sanitary surveys of communities with subsequent detailed report to local authorities and organizations with recommendations.
4. Supervision over sanitation of common carriers, including sources and handling of water supplies. The bureau has been designated as official representative of the U. S. Public Health Service for the conduct of this work.
5. Sanitary inspections of public school buildings, with reports and recommendations to authorities.
6. Malaria control by mosquito eradication, drainage, oiling, and fish control—a strictly engineering proposition.
7. Studies of city waste collection and disposal, and street cleaning, with advisory reports to communities so studied.
8. Investigations of typhoid fever and other diseases that may be water-borne.
9. Dairy inspection and scores.
10. Public addresses on sanitary engineering topics.
11. Informal advice by correspondence on sanitary matters.

An inspection service is maintained by the bureau to give close attention to nuisances,

abatement and correction. Engineers prepare for distribution plans of residential and institutional sewage treatment plants for the use of citizens contemplating such installations. Plans and advice relative to privy types is also given out. Rural sanitation work is one of the largest fields of endeavor and through this bureau thousands of sanitary privies have been installed in various sections of Florida.

A well-equipped laboratory under the supervision of the bureau keeps a check on all municipal and private water supplies. Water examinations are made daily.

In final it might be stated that any problem of a non-medical nature relating to the field of sanitation comes within the realm of this bureau.

Bureau of Diagnostic Laboratories.

The main or central laboratory is located in the State Board of Health Building at Jacksonville. On account of the steady increase in the amount of work and in order to facilitate the handling of specimens received from physicians and health officers located in more distant parts of the state, branch laboratories have been established at Pensacola, Tampa, Miami and Tallahassee.

The laboratories of the State Board of Health are conducted to aid in the diagnosis of any disease or condition of a bacteriological or parasitic nature dangerous to the public health.

From the nature of their work it will be seen that they are very closely allied to all other departments of the State Board of Health and to all the other health activities carried on in the state.

As there are very few of the Florida cities that conduct laboratories in which diagnostic examinations are made, the state laboratories are very closely allied to the activities of the various city health departments, and are ready to respond promptly to any call for aid.

The laboratories not only serve as diagnostic agents but they are the main distributors of the biological products furnished by the state, although there are sub-stations conveniently located over the state where diphtheria antitoxin and small amounts of typhoid vaccine may be secured.

Vaccine virus, tetanus antitoxin and antimeningococcus serum are obtainable from any of the laboratories, although larger amounts should be requested only from the central laboratory at Jacksonville. All requests for containers or biologics and all letters requesting examinations should be directed to the laboratory.

Antirabic treatments are distributed only from the central laboratory and all correspondence in regard to them should be addressed to that laboratory, for this frequently enables more prompt filling of the request.

Bureau of Vital Statistics.

Vital statistics has been defined as "The science of numbers applied to the life history of communities and nations." They reveal to us normal and abnormal conditions, the working of great social influences or the presence of anti-social forces.

Dr. Trask once said: "Vital statistics in their present developed form give a fund of useful information otherwise unobtainable that has become an essential to every organization, community and nation. They give a composite picture of the life history of the people which can be secured in no other way; they furnish a means of comparing a life history of one community or one people with that of others, and of the present with the past."

We are proud of the fact that the death records in Florida are so complete that the state was admitted into the Registration Area of the United States for Deaths in 1919. The United States Government found death records over 90 per cent complete.

The original birth and death certificates are legal records by law in this state and are filed in a fireproof vault, arranged and bound in volumes and card-indexed alphabetically for ready reference. The records are very valuable to the people of the state for many

reasons. A birth certificate proves citizenship, and every child born in the state of Florida should have the fact of its citizenship made a matter of official record. A certified copy of a birth record is the best possible proof of heirship. Estates of great value have been lost by American citizens because neglect of birth registration prevented them offering this form of proof.

There are three important reasons for a record of death:

1. Its legal use to prove the death in order to secure pensions, life insurance, etc.

2. Sanitary use to assist health officers and those interested in the welfare of the people.

3. Demographic use, which is the information as to the movement of population.

The responsibility for establishing complete records of births, deaths and morbidity lies chiefly with the practicing physicians. The laws of this state have placed this responsibility on physicians, and as a profession they have responded heartily, as the records indicate. Cases of sickness have been reported favorably by a portion of the physicians, and every day the list of co-operating physicians is increased.

Bureau of Child Welfare.

This bureau has recently adopted a minimum standard for the public protection of the health of mothers and children which it will attempt to establish.

This standard will not be quoted in full, but some of the outstanding features will be mentioned.

MATERNITY.

1. Maternity or prenatal centers, sufficient to provide for all cases not receiving prenatal supervision from private physicians.

2. Clinics, such as dental and venereal clinics.

3. All midwives to be required by law to show adequate training and to be licensed and supervised.

4. Education of general public as to problems presented by maternal and infant mortality and their solution.

INFANTS AND PRE-SCHOOL CHILDREN.

1. Complete birth registration by adequate legislation.

2. Prevention of infantile blindness by making and enforcing adequate laws for treatment of eyes at birth.

3. Sufficient number of children's health centers.

4. Children's health centers to provide or to co-operate with a sufficient number of nurses to make home visits to all infants and children of pre-school age needing care.

5. State licensing and supervision of all child-caring institutions.

6. General educational work in the prevention of communicable disease in infants and young children.

SCHOOL CHILDREN.

1. Proper construction and sanitation of school house.

2. Adequate playground and recreational facilities.

3. Adequate space and equipment for school medical work.

4. Full-time school nurse.

5. Part-time physician for less than 4,000 children. Full-time physician for more than that number.

6. Open-air classes with rest periods and supplementary feedings for pre-tuberculosis and certain tuberculosis children.

7. Nutrition classes for physically subnormal children.

8. Examination by specialists of all atypical or retarded children.

9. Education of school child in health habits and hygiene.

10. General educational work in health and hygiene, including parent and teacher.

The Bureau of Child Welfare is also in charge of the orthopaedic work of the State Board of Health.

Bureau of Venereal Diseases.

The fight against venereal disease was recognized as a public duty and a public necessity when, in July, 1918, Congress enacted the Chamberlain-Kahn bill creating the United States Interdepartmental Social Hygiene

Board and a Division of Venereal Diseases in the United States Public Health Service.

For the purpose of co-ordinating and systematizing the work in this state and for the purpose of more fully co-operating with the national agencies, the Florida State Board of Health has created and organized a Bureau of Venereal Diseases.

The activities of this bureau are conducted under three main heads: Educational, Medical and Repressive.

EDUCATIONAL.

In our educational work we avail ourselves of every method of proper publicity; lectures, motion-picture exhibits, posters, distribution of pamphlets, classes in schools and colleges, and circularization by letters.

Our purpose is to teach social hygiene; to create a greater interest in social hygiene and a spirit of co-operation in the work amongst all classes of our citizens.

Our purpose is to create a demand for the enforcement of our present protective social measures and for a sentiment that will insist on the enactment of additional laws that are necessary for the carrying out of our plans for making Florida a safer, cleaner place in which to live.

Our purpose is to stress the importance of carrying out our plans from the economic standpoint, pointing out forcibly the facts as they relate to the very considerable loss we are suffering industrially from the lowered vitality and stamina of a highly infected laboring class, and that venereal disease is responsible for a large labor turnover, a high sickness rate, a considerable accident rate, and of a generally admitted lowering of efficiency.

It is our purpose to stress the further deplorable fact that our charitable and penal institutions are thronged with the wreckage resulting from our shamefully high venereal rate and that a considerable share of our taxes are levied for the support and treatment of these unfortunates.

It is our purpose to point out the results of venereal disease as applied to the individual; the terrible moral loss; sickness, poverty and death; the disruption of homes; the propagation of defective children to bankrupt future generations.

In fact, it is our purpose to cover all the various points involved in a campaign to eradicate gonorrhea and syphilis. We are endeavoring to convince the people that such conditions are present; that they are unnecessary and wholly evil; that, though the fight be strenuous and long drawn out, it can be made successful. We are pointing out all the methods of attack and are soliciting the co-operation and active assistance of every individual and of every group.

MEDICAL.

In the control of any communicable disease it is recognized that great effort should be directed toward the clearing up of individual foci of disease. One of the first activities of the Bureau of Venereal Diseases was the establishment of a chain of clinics for the free treatment of syphilis, gonorrhea and chancroid.

On account of our recent reduction in funds it has been necessary to reorganize these clinics on a basis whereby they are conducted without cost to the State Board of Health. They are furnished arsphenamine from a supply donated by the United States Public Health Service. There are twelve such clinics now in operation.

REPRESSIVE.

The State Board of Health has endeavored to secure the enactment of such repressive social measures as are necessary to control the activities of those persons who are instrumental in the spread of venereal disease.

In this paper I have attempted to give a brief description of the State Health Department, its origin, its purpose, its divisions, its powers and duties. The outline of the activities of the different bureaus will indicate the correlation of the work of the bureaus with each other and with the medical profession and health organizations of the state.

SUPRARENAL AND THYROID INSUFFICIENCY.*

ALVIN J. WOOD, M. D.,
St. Petersburg, Fla.

During the past three years I have grown more interested in the internal secretory glands. This has been due to the accidental discovery of a case of myxedema. The results were so prompt and satisfying to both the patient and myself it stimulated me to keep watching for another case that could be handled with equal satisfaction.

By writing this paper I do not desire to get the reputation of treating or believing that all diseases are caused by the disturbance of the internal secretory glands and of having discarded all other means of treating disease, but I do not think this has been given its proper rating by the profession, and if this paper is the means of stimulating local medical thought along these channels it is all that we can hope for.

THE THYROID.

The function of the thyroid is little known, yet the work on internal secretion of this gland has been found to be more important and definite in regard to treatment than any of the other disturbances of the internal secretory glands. Its removal causes serious symptoms of a chronic or an acute nature. In the first instance there is evidence of marked impairment of the general metabolic processes and of heat production association with impairment of muscular power (myxedema), or, if occurring in children, there is a marked retardation of growth (cretinism). When of an acute character, tetanic symptoms often develop. When removal is complete, death follows in from one to four weeks. The cause of thyroid insufficiency we know very little. That it occurs cannot be questioned. We can readily diagnose a marked case if the symptoms are kept definitely in mind. It is a reflection upon the profession that so little time has been devoted to working out the milder types of thyroid insufficiency.

If one case of marked myxedema is found by one man in a year it seems reasonably certain he should have quite a number of mild cases that should readily respond to the feeding of thyroid. A person giving thyroid to any case not having the typical symptoms of myxedema would be severely censured by his fellow physicians many times. But why should a patient need all the typical symptoms of myxedema before thyroid is indicated, and why would a patient give those symptoms when his thyroid insufficiency was in its beginning? What symptoms a patient should complain of when his insufficiency is in its infancy I do not know, but hope the time will come when we can apply the remedy before a patient comes into the sad state we now call myxedema. Is it not necessary to do some experimental work before knowing the first symptoms? Why is it not just as reasonable to give a small dose of thyroid to a patient complaining of mental and muscular sluggishness, one who feels the cold more acutely than other persons, as it is to give iron-quinine and strychnine, or similar drugs? In fact, in my judgment, the former has a more scientific basis.

It seems to me, we should find more cases of thyroid insufficiency in Florida than thyroid hyperfunction, but I feel sure that the experience of the men here is the reverse. In the overactivity of the thyroid a patient never feels the cold. He is always warm, while in insufficiency it is the reverse. Among the people who come down here a large percentage come because they feel the cold weather keenly. For this reason we should have an opportunity to do some pioneer work in this line.

In looking over my case histories I have selected three cases that have responded readily to thyroid. The last case is one that might easily be regarded as something else.

CASE 1.—Male. Age 38. Nationality, American. Height, 5 feet 6 inches. Weight, 130. Occupation, traveling salesman.

*Read at the meeting of The Florida Midland Medical Society, at St. Petersburg, October 12, 1921.

Family History: Father and mother living and well. Two sisters and one brother living and well. Brother and sister died in infancy.

Infancy and Childhood: Has had all the exanthema in childhood, including scarlet fever.

Education: Always kept up with his class, but quit school at 16 before finishing grammar school.

Habits: Light sleeper. Always as active as one of his age or more so. Always able to eat anything he liked without trouble until six years ago, when grease and coffee in the mornings would make him sick at his stomach, which has persisted since then.

Previous Diseases: Pleurisy in 1907 all summer, with good recovery.

Date and Manner of Onset: Fall of 1915 began with diarrhoea, fever with flashes of heat and cold which lasted for two days, when he became constipated for a few days and began to bloat in abdomen, which has occurred at varying times ever since. He noticed it took more heat to keep him warm since he had the pleurisy in 1907. A rough condition of the skin developed seven years ago on the legs, and a dry condition of skin all over the body. He has never sweat as much as other boys, but sweats none now in past seven years. A bloaty, stolid condition of the face in 1915. Speech has become slower and with more hesitancy than previously. About the age of 20, while playing football, he could not run as fast as he could before. Seemed like something in the legs scraping the shins; this became gradually worse and at last settled in knees, and would feel quivery. Defective memory not noticed. Has been much more sleepy than usual for past seven years.

Present Symptoms: Bloating; weakness in knees; sleeps from 7 p. m. to 8 a. m., then takes a nap of a couple of hours in daytime. He has several blankets over him and feels cold. He was compelled to give up his position as traveling salesman and go to work in his father's vulcanizing shop, and this became too hard work for him. He gave it up and is helping his sister in her store, handling flowers, but thinks he will have to give this work up as it is getting so hard for him to get around. Is so sluggish mentally; speech so monotonous. Can hardly walk up stairs. To run is absolutely out of the question. Has rheumatism in the knees and hips. Is growing more irritable, and life is a burden to him. Pulse 45. His previous physicians told him he had a low renal function, with albumen and casts. They also confirmed this.

Diagnosis: Myxedema. Treatment, 2½ gr. Thyroid Ex. t. i. d.

Dec. 5, 1919.—Had a severe headache, which he has never had before in his life. Dose reduced to 1¾ gr. t. i. d. Pulse 70.

Dec. 6, 1919.—Feels as well as ever, except an uncertain, quivery sensation in the knees. R. B. C. 3,426,000; Haemo, 60%; W. B. C., 5,260.

Dec. 10, 1919.—Complains of pain in left popliteal space. Pulse, 88; urine, neg.

Dec. 13, 1919.—Has felt warm ever since he has been taking Thyroid. Pain in knees of December 10 changed to an aching in the muscles of legs. Urine, neg. Is not as sleepy in the daytime and stays up later at night.

Dec. 19, 1919.—Has no discomfort, except stiffness in the leg muscles and feeling weak when climbing stairs. R. B. C., 3,320,000; W. B. C., 6,000; H., 70%.

Jan. 3, 1920.—Skin coming off in scales, bed is covered in the morning. Legs very stiff and painful.

Jan. 10, 1920.—Skin has scaled all over the body, except the legs. Legs are swollen some, but the pain and stiffness almost gone. Change came suddenly during the night of January 3. Next morning when he awakened he wondered if he had legs, because of the change of feeling. Been able to walk much more. Eats all the time. Urinating twice at night, which comes on suddenly. R. B. C., 3,126,000.

Feb. 5, 1920.—Feels fine in every way, except some stiffness in damp weather; a

slight weakness in knees, and he says the weakness is gradually improving.

March 20, 1920.—Feels fine in every respect. Does not sleep but four or five hours a night, but wakes up refreshed and rested. R. B. C., 4,368,000; W. B. C., 4,500.

March 27, 1920.—Discharged, feeling fine in every respect, and expects to go back to his former position as traveling salesman.

NOTE.—At this time he is getting around as well as any other individual, doing anything he desires. He is taking 1 gr. of Thyroid morning and evening.

CASE 2.—Male. Age, 51. Nationality, English. Weight, 185. Occupation, carpenter. Married.

Family History: Father died of pneumonia at 64. Mother living and well. No brothers or sisters.

Education: Common school.

Alcohol: None.

Tobacco: Moderate.

Previous Diseases: Blood poisoning at 25 in his left hand. Lagrippe at 40; very bad; in bed two weeks. Flu in 1920 for a week, and present illness seemed to start soon after this.

Date and Manner of Onset: Has been growing worse for past six months. He has been unable to work for past two days.

Present Symptoms: Swelling of the entire body. Has not been able to sing for two years. Skin dry and thick. Hair dry and stiff. Speech harsh and slow; also feels the cold. Has sweat very little for past two years. Wants to sleep all the time. Nails dry and cracked. Mental sluggishness. Monotonous speech. Memory for recent events has grown rapidly worse for past six months. Some days he feels quite well, while the next he feels very badly. Is irritable and cross. Numbness all over the body. Cannot read ten minutes without going to sleep. Bld. P., 110-70; R. B. C., 3,000,000; W. B. C., 5,800; pulse, 50.

Diagnosis: Myxedema.

Treatment: 1 gr. Thyroid t. i. d. Urine, negative.

March 14, 1921.—Thinks he can walk better. Sleeps well all night, but woke up earlier this morning. Pulse, 76. 1 gr. Thyroid 4x a day.

March 15, 1921.—Slight headache, so he did not get to sleep until 2 p. m., but feels rested this a. m. Pulse, 86. Hands do not feel as numb, and he can close his fingers, which he has been unable to do for a month.

March 17, 1921.—Skin is scaling; speech better; also thinks quicker; cannot sleep days. Can read a paper an hour or more without going to sleep, which he has not been able to do for more than a year. He has been taking only 3 gr. the past two days because of a headache.

March 18, 1921.—Walks better. Can pick up his feet easier than he has in past two years. Appetite better, and no trouble with his stomach. Has a pain for past three days which starts in hips and shoots up to the back of neck. Feels like a toothache. Cannot sleep in daytime. Read a paper from 7 to 9:30 p. m. last night and was not sleepy at that time. After this he ate a grapefruit and went to bed; went to sleep in a few minutes and did not wake up until daylight, feeling refreshed and better than he had in two years. Numbness much improved. Does not feel the cold as much and does not use as much cover as previously. He felt like going to work this morning, the first time in six months or a year. He worked hard all day yesterday and feels satisfied he is going to get completely well.

March 19, 1921.—Felt good all day yesterday, and worked hard all day. Read from 7 to 11 p. m., then went to bed and slept well until he woke up at 5:30. Went to work immediately and worked until 9:30, when he got ready to come to town. When he got onto the street car became dizzy, which lasted until he arrived at my office and sat down. Pulse, 84.

March 21, 1921.—Has sweat more in past two days than he has in a year. Was compelled to put on thinner underclothes. Feels stronger than in two years. Is not as short

of breath as he has been. Walks much better. Talks better and thinks clearer, but cannot figure as well as he did previous to six months ago. Numbness has all disappeared except in middle finger of left hand, which was injured a few years ago. Thinks he has lost considerable weight. Pulse, 75.

March 23, 1921.—Weight, 170. Ran for street car yesterday, the first time he has been able to run for a year and a half without falling down. Pulse, 92. 1 gr. Thyroid, morning and evening. Says he can figure now with comparative ease.

Note.—Patient is working at his trade every day, and feels well in every respect, excepting varicose ulcers on his left leg, which cause him some trouble.

Case 3.—Male. Age, 58. Occupation, farmer.

Family History: Father died of pneumonia at 75. Mother died of heart trouble at 73; was sick several months with it. Did not have apoplexy.

Tobacco: None.

Previous Diseases: Never had any serious illness in his life. Had a slight attack of tonsilitis a year ago.

Date and Manner of Onset: Has been bloating with gas for past fifteen years. Thinks he has felt the cold for twenty-five years more than others. Pulse has been slow for twenty-five years or more.

Present Symptoms: Bloats with gas at times; has lost 10 pounds in the past four months; feels the cold much worse than others, and takes more bedclothes than his wife to keep him warm. Pulse ranges from 50 to 60 per minute. Appetite good, but afraid to eat because of gas. Sleeps good most of the time. Pulse, 50. Abdomen, negative—Rt. Inguinal Hernia.

Treatment: Thyroid Ex. ℥i. Tab. No. 60. Sig., one morning and evening.

March 19, 1921.—Feels about the same. 1 gr. Thyroid t. i. d.

March 23, 1921.—Feels much improved. Pulse, 70. Sleeping better.

March 26, 1921.—Bloating not so marked. Can eat anything he wants. Pulse, 76.

March 28, 1921.—Mrs. Fowler came to me without her husband's knowle lge to ask me what she could do to help out with the diet, and stated that before he came to me he had grown so irritable she could hardly live with him, and that now he was so different. She was sure the medicine was helping him and that he was eating well and taking so much more interest in life.

April 9, 1921.—Feels much better in every way. Pulse, 72. Is not gaining in weight. Is going home next week and wants to know when he should stop taking Thyroid.

THE SUPRARENALS.

Howell gives three functions for the suprarenals:

1. Aids in maintaining normal metabolism by its action on nerve centers.

2. That it produces an antitoxic substance that neutralizes or destroys certain poisonous substances produced by metabolism.

3. Some important relation to the growth of the body and especially the genitals.

Removal of the secretion results in a marked loss of muscular tone and vigor, as exhibited by heart, blood vessels and skeletal muscles, and death follows quickly. Experiments on animals show that 11-12 of the gland can be removed before symptoms of insufficiency develop. David Reisman classifies adrenelin insufficiency:

1. An acute insufficiency dependent on destructive changes as from hemorrhage-thrombosis or necrosis. The symptoms closely resemble those produced by adrenulectomies in animals, great mental and muscular asthenia, hypotention frequently associated with severe abdominal symptoms.

2. An acute functional insufficiency due to some infectious disease such as pneumonia, diphtheria, scarlet fever, influenza, malaria, typhus fever and malignant endocarditis. Josue believes that adrenalin insufficiency is a part of every infectious disease, including alimentary intoxications, chloroform and arsenic poisoning.

The symptoms found in adrenalin insufficiency are: Great muscular weakness, low blood pressure, circulatory weakness, anorexia, eructations, nausea and vomiting, bowels may be constipated or loose, dyspnea on effort, dimunition of memory and intellect, headache, neuralgic pains, insomnia, pigmentation of the skin.

Treatment consists of abundant rest, liberal feeding, adrenalin or adrenalin extract. Styrchnine is said to stimulate the adrenalins.

Case 1.—Female. Age, 60. Nationality, American. Height, 5 feet 2 inches. Weight, 100. Occupation, housewife.

Family History: Father died of some disease of the arteries at 83. Mother died of old age at 85. One brother living and in good health.

Personal History: Menstruation began at 14; regular, without pain. Never had any trouble until after having the grip in 1890, when it became more or less irregular, with pain, and remained so until the change of life at 45. Had two miscarriages at six weeks; she thinks was brought on by riding over rough roads.

Previous Diseases: Diphtheria at 2 years; very severe. Typhoid at 7 years; quite severe. Grip very severe in 1890, and a light attack once or twice a year ever since then. Nervous prostration for five years.

Date and Manner of Onset: She has had tired spells so bad since 7 years old that she would go to bed and remain for weeks at a time, and no one could find any trouble. During the past twenty years the tired spells had been less frequent, but have been more constant than before. She thinks she was born tired. In December, 1918, she developed a severe, constant, aching pain in the pubic region, with frequent urination, and was taken to the hospital for bladder trouble and remained four weeks. About a year later a pain developed in upper lumbar region; also neuralgic pains in the arms. Soon after this a pain developed in left lumbar region and one in the epigastrium. Skin over body has been a dark-brownish color for past eight years, and dark-brownish spots came on the abdomen a year ago.

Present Symptoms: Tired all the time. Cannot do scarcely any work because of this. Pain in upper lumbar region, left hypochondriac and epigastric regions. Brownish tint over body, with blackish-brown spots on face, neck, arms, abdomen and legs. Constant neuralgic pains in both arms. Bld. P., 100-75.

Diagnosis: Addison's disease.

Treatment: Suprarenal Ex. 2 gr. t. i. d.

Note.—This was given until July 9, 1921, but patient did not improve in any way except her systolic blood pressure was 120 at times. She has been in bed about all the time for the past four months. On July 9, 1921, decided to give 10 min. adrenalin hypo t. i. d.

July 15, 1921.—Pain in epigastrium ceased.

July 25, 1921.—Does not feel near as tired.

Note.—Patient seemed to gradually improve and was up and around the house until Aug. 10, 1921. She came down with the grip, but has made a slow recovery.

Sept. 17, 1921.—Patient up and around the house doing her work. Has been downtown and visiting several times. Does not feel as tired nor have pain only in left hypochondric region, which is quite severe at times. Says she feels better than for several years. Same treatment continued.

Oct. 1, 1921.—Does not feel as tired as formerly, but tires easily. Is walking downtown now, which she has not been able to do since May, 1921. Bld. P., 120-76.

SYPHILIS AS A PUBLIC HEALTH FACTOR.

John D. Gable, M. D.,
Junior Assistant Physician, St. Elizabeth's Hospital,
Washington, D. C.

Syphilis is one of the most formidable scourges of humanity now faced by the Public Health Service—national, state and local.

The object of this paper is to call attention to a few facts relating to this disease and to appeal to all of our profession to render the greatest possible co-operation in dealing with it as a public menace.

Scientific investigation and discovery along this line have made wonderful strides, but we are forced to admit that those advances in information have not been put into concrete form in practice as it should have been. In fact, we are not entirely without examples of instances in which splendid measures have been so abused as to cause great harm. For example, the writer only a few months ago had occasion to call the attention of a conscientious and able layman who holds a very responsible position, having large numbers of men under his charge, to a rather serious percentage of active—*very active*—syphilis among the men in his care. He was surprised that I should think such condition existed when records were at hand to show that every syphilitic there had had three "shots of 606, and they tell me that is a sure cure." It was easy to see that this gentleman —the conscientious and intelligent man that he is—had been told by someone in whom he had more confidence than he had in the author of this paper that "three shots of 606 is a sure cure for syphilis," and yet his men were literally rotting with, and spreading to others, this awful disease. Now, in this case (and there are many others), someone, either through ignorance of, or overconfidence in, a remedy, or more likely because of carelessness on his part, had placed the "mantle of false security" over a seething hotbed of human destruction.

Syphilis is a chronic, systemic, infectious disease caused by the spirochetes possessing different degrees of virulence and malignancy, and "Reasoner has been able to demonstrate, to his own satisfaction, fixed differences in the various strains of spirochetes as studied in the adult rabbit." (*Anders' Practice of Medicine*, p. 378.)

SOME MODES OF INFECTION.

Syphilis may be transmitted from one person to another in many ways. It is estimated that about 70 per cent of all cases are contracted through illicit sexual congress, while others become infected by accidental inoculation as by kissing, by hands coming in contact with infecting materials, by allowing an abraded surface—no matter how slight the abrasion—to come in contact with the spirochetes causing the disease, and infection may take place in-utero.

The initial lesion is a chancre and may be on any part of the body, and may vary in severity from the well-developed, unmistakable chancre to one so mild and insignificant as to be unnoticed. The history as to chancre is of diagnostic value only when positive, for the patient may have syphilis without ever seeing a chancre, so slight may they be.

DIAGNOSIS.

The time was, only a few years ago, when a general practitioner could be excused for failing to diagnose a case of syphilis, but with the advancement made in laboratory methods of diagnosis and in view of the number and locations of laboratories maintained by the State Boards of Health, no such excuse exists any more. Any textbook on so-called venereal diseases, or a book on the practice of medicine will give the usual symptoms of the disease, and if enough of those are present to cause one to even suspect syphilis, he should procure a blood specimen and send to the nearest State Board of Health laboratory for Wassermann reaction test, which will be positive in from 90 to 95 per cent of cases of any stage of syphilis when not modified by treatment.

PROPHYLAXIS.

The medical man, more than those of any other profession, trade or occupation, is called upon by duty to do all in his power to destroy the source of his own means of support, that is, to prevent people from getting sick. It has been well said, "A doctor himself is never sure of the best work he ever does—the illness he prevents." The case of syphilis is one where prophylaxis

overlaps the fields of diagnosis and treatment.

If a doctor is consulted by a person with recent syphilis, a correct diagnosis and appropriate treatment are essential to the prevention of more serious trouble on the part of this individual, as well as the protection of others, perhaps yet unborn, from contracting the disease from this source. There are those who view this subject lightly, but such are "playing with fire."

On the prevention of this disease many measures have each one its advocates. Some advocate legislative control, and this has numerous prongs; others, public education, and others, moral suasion, etc., etc. I think there is room for all of those combined. The joke is told that the question was once asked who was the greatest man who ever lived. Some answered Columbus, some George Washington, etc., but when it came the negro's time to answer, he unhesitatingly answered, "De man what invented dice." I am sure that the legislator who devises a law that can purify illegal practices by legal regulations will be classed as great. But physicians, as a rule, are not classed as lawmakers, and legislatures of Florida have been slow about enacting into law such measures as medical societies have worked out and recommended. In fact, I know a doctor who ran for the State Senate and secured his election by pledging himself not to work for any form of "medical bill" while in the legislature. Then what can the doctors do to lessen the ravages of syphilis? They can do a great deal. Tell the youth and young men of our state the plain truth about syphilis. Tell them how easy it may be contracted, but how hard it is to get rid of, and what awful conditions it may lead to after having been contracted, in spite of all treatment. Tell the patient who has it that there is no "royal road nor short cuts to recovery;" that he must take treatment regularly for a long time; that he must be sufficiently humane to refrain from spreading the disease to others, and that if he is a single man "he must not marry till he has had four negative Wassermanns at least six months apart." (*Anders.*)

TREATMENT.

A good line of treatment is found in any book on genito-urinary diseases or standard practice of medicine. The main precautions to be observed are that, although the arsenic preparations, such as Salvarsan and Neo-Salvarsan, are of very great value in treatment, they do not take the place of, nor remove the need for, the long treatment with the old stand-by, mercury. And, again, if a patient comes to you with a $500 case of syphilis and only $25 in cash, as so often does happen, tell him frankly you cannot handle his case, and turn him over to the State Board of Health. Don't give him a little treatment and leave him to spread the disease further.

PROPAGANDA FOR REFORM.

ALUMINUM POTASSIUM NITRATE. — The product advocated in the July 17, 1920, issue of the Chicago Medical Bulletin for the treatment of osteomyelitis is not on the market. been analyzed for the Council on Pharmacy and Chemistry in the Association's Chemical Laboratory. Analysis showed that it did not have the composition claimed. For practical purposes the preparation may be regarded as a mixture of 97.5 per cent potassium nitrate U. S. P. (saltpetre) and 2.5 per cent of aluminum nitrate (which may be purchased from chemical supply houses). (*Jour. A. M. A., April* 30, 1921, p. 1265.)

ELECTRARGOL OMITTED FROM NEW AND NONOFFICIAL REMEDIES. — Electrargol — a preparation of colloidal silver—was admitted to New and Nonofficial Remedies in 1914. In 1918, Fougera & Co. was advised of unwarranted claims which were being made for Electrargol and notified that the product would be omitted from New and Nonofficial Remedies unless a thorough revision of the claims was made in a reasonable time. As the reply of Fougera & Co. indicated that a

(*Continued on page 136*)

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RADIUM THERAPY.

"Yes, radium will cure cancer when it is properly used," was the statement which press dispatches of a few months ago credited to Mme. Curie as her reply to the query of an interviewing reporter.

"Dr. Deaver, President of the American College of Surgeons, declares that radium is a failure in the treatment of cancer." This, or a similar headline, was carried on the front page of almost every daily paper in the country on the morning of October 25, last.

The average man, upon reading these two contradictory statements probably would shrewdly conclude that, since it was manifestly impossible for them both to be correct, the truth of the matter might be assumed to lie somewhere between these two extremes. He would have, however, just cause to wonder how it could possibly be that two such authorities, each speaking with undoubted sincerity, could possibly express convictions so diametrically opposed.

In analyzing such situations it is necessary to first consider whether or no the statements which the reporter ascribes to the speaker clearly and correctly express the ideas which the speaker himself was trying to give. In the interview with Mme. Curie it would be remarkable indeed if she, unaccustomed to American interviewers and speaking through an interpreter, could accurately convey to the reporter exactly the same shade of meaning which she had in her own mind.

If, therefore, with this thought in mind, one might be allowed to translate back the abrupt newspaper sentence into the scientific idea which Mme. Curie was probably trying to express, a less dogmatic and sweeping statement would probably be obtained. Reasoning from the knowledge which we have of the effects of radium rays upon the living cell the following statement might be offered as a substitute: "Any case of cancer can be cured if it can be exposed to the rays of radium in such a way that every cancer

cell will receive a lethal dose of radiation."

Such a theoretical statement probably represents Mme. Curie's actual thought much more accurately than the terse expression credited to her by the interviewer, and it would be accepted as scientifically accurate by anyone who was familiar with the reactions produced by radium in the living cells.

It is more difficult to understand the statements attributed to Dr. Deaver in the newspaper accounts of his address and to reconcile them with the belief in the value of radiotherapy which is held by the majority of those who have given the subject especial study.

Exactly what Dr. Deaver said and exactly what he meant have been live topics of conversation, not only in medical circles but also unfortunately in the lay press. The reports published in the different Philadelphia papers and by the press associations agree fairly well as to the verbiage employed in the address as it was delivered by Dr. Deaver before the American College of Surgeons at its annual meeting in Philadelphia on October 24, 1921. But the conception of Dr. Deaver's attitude to radium therapy which the reader obtains from these newspaper reports differs materially from that gathered by study of the official text of the address as it is printed in the official organ of the American College of Surgeons.*

The few sentences which have caused so much comment read as follows in the published paper:

"Men of experience have seen method after method heralded as a panacea, lauded to the skies, only to fall into disuse and be consigned to a well-deserved oblivion, because it has failed to stand the acid test of experience. I hesitate to express my fear that this may prove to be the ultimate fate of radium treatment for cancer, for I should greatly regret to see our fervent hopes rudely shattered. But, at least, I feel justified in sounding a note of warning against too great expectations, for we have already found that it falls far short of being a universal cure and, indeed, in many situations where we most need help it has proved sadly lacking."

In contrast with the pessimistic but nevertheless restrained tone of the text as quoted above, one compares with interest the statements which the newspaper accounts attribute to Dr. Deaver in the delivery of this address.

The Philadelphia Public Ledger† of October 25, in speaking of Dr. Deaver's address, states that "Its benefits, he declared, had been practically negligible and, in many cases, it was found to work greater harm than good."

In the same issue a dispatch dated New York, October 25, attributes to Dr. Deaver the expression that "nothing can be looked for from radium therapy in the treatment of cancer."

The New York World, October 26, in a dispatch from Philadelphia reporting the meeting uses practically the same words as the *Ledger*, claiming that Dr. Deaver stated that the "benefit from radium had been practically negligible and in many cases it worked more harm than good."

In the report published in *The Philadelphia Evening Bulletin*, October 25, 1921, we read that "Dr. Deaver * * * said that radium had failed utterly in the treatment of cancer, and in many cases it was found to have worked more harm than good."

Two definite statements are found to be common to all of these various newspaper reports: First, that radium has been a failure in the treatment of cancer; second, that it has often done more harm than good. Careful scrutiny of the published official text of the address fails to show any such statements. The words, "Radium falls far short of being a universal cure," or "In many situations where we most need help it has proved sadly lacking," can in no way be twisted into saying, "Radium therapy is a total failure." Moreover, we search the text

Surgery Gynecology and Obstetrics, December, 1921, pp. 605-606.

†Newspaper quotations as abstracted in *Radium*, November, 1921.

in vain for any statement remotely approaching the charge that radium often does more harm than good.

We must conclude either that the reporters, impressed by the sensational possibilities carried in Dr. Deaver's thoughts, read into his words more than he actually said, or else that the essayist, engrossed in the development of his subject, departed from his prepared text and expressed ideas which are not embodied in the published address.

While discussions of medical matters in the lay press are much to be deplored, the standing of the speaker and the vital interest of the subject under consideration made such a discussion inevitable. For many days after the address the metropolitan press contained numerous statements and interviews from many physicians of the highest standing, commenting upon Dr. Deaver's reported utterances. Many of these interviews are most interesting. The majority express opinions dissenting more or less vigorously from the views of Dr. Deaver. The few extracts which we quote may serve as fair examples of the tone of the most of the others.

Dr. Robert B. Greenough, Director of the Cancer Commission of Harvard University, is quoted in a dispatch from Boston to *The Philadelphia Public Ledger,* October 25, as saying that he "could not believe that Dr. Deaver had actually asserted that radium has proven a failure as a cancer cure."

Dr. F. C. Wood, Director of the Institute of Cancer Research of Columbia University, New York City, states in an interview with a reporter from *The New York World* (published under date of October 26): "* * * Radium is extremely effective in curing the small cancers of the face. There are many instances of such cures, the patient having remained well for ten to fifteen years after the treatment. In cancer of the womb, radium has also been most valuable. * * * Dr. Deaver's statement that he hesitates to express the fear that he has that nothing can be looked for from radium in the future, is a very unsafe generalization. * * * To say there is to be no progress in the future is to be far more venturesome than I am willing to be."

Dr. Harvey R. Gaylord, Director of the New York State Institute for the Study of Malignant Disease, gave an interview to *The New York World,* published October 27. "Such an utterance smacks of the surgical knowledge of the middle ages," was Dr. Gaylord's caustic criticism, according to the interviewer. "This is no time," said Dr. Gaylord, "to raise the question whether or not radium is more efficacious than surgery in the treatment of cancer. Radium has cured cases of cancer which the surgeons could not help. In other cases, far advanced, radiation has lengthened life, relieved suffering, and helped where the patient has been beyond assistance from surgery. * * *"

Numerous other interviews of similar tenor might be cited. *The Philadelphia Evening Bulletin* of October 25 quotes Dr. Frank Edward Simpson, of Chicago, as saying, "Such a statement is little short of criminal!" Dr. W. H. B. Aikens, of Toronto, who has given much study to various treatments for thyroid conditions and who is an authority on this subject, states (*Toronto Star,* October 31): "Had the statement of Dr. Deaver been made fifteen years ago when the therapeutic use of radium was in its infancy, it might have been justified. But to make such a sweeping assertion in the face of facts established after long years of experience is decidedly unwarranted. * * *"

Dr. Howard Kelly, of Baltimore, in an address before a lay audience at Montclair, N. J., (reported in *The New York Herald* of November 2), said in part: "* * * Radium has accomplished marvelous cures in cases where surgery would have been impossible, or at least would have been attended with great hazard. * * *"

Probably the most important of these communications intended for lay readers was a statement from the Memorial Hospital of New York City, signed by the President and Secretary of the Hospital Association. This

hospital is the largest public hospital devoted exclusively to the treatment of cancer and allied conditions, using both operative and radio-therapeutic methods. The report reads in part: "* * * As directors of a large cancer hospital which uses radium extensively, we feel called upon to dissent from this conclusion" (*i. e.*, that of Dr. Deaver's). "At the Memorial Hospital we have under treatment several thousand sufferers from cancer, many of whom are being treated by radium. These people read the papers. When doubt is cast upon the efficacy of the method with which they are being treated, they are apt to suffer grave mental disturbance, their proper treatment may be interfered with or even interrupted, and the best efforts of our physicians and surgeons are hampered. The attending staff of the Memorial Hospital, drawn from the faculty of the Cornell University Medical College, unanimously disagrees with the conclusions of the above-mentioned surgeon."

Again, in another part of the same communication, we read: "It is most unfortunate and ill-advised to state that 'nothing can be looked for from radium in the future to be of any advantage in the treatment of cancer.' The facts show too much already accomplished to warrant any such statement. * * * Sweeping and general denunciations, based on data not thoroughly investigated, are misleading to the public and serve no good purpose."

Scientific conclusions are not based upon the results of newspaper discussions. When, however, there is such unanimity of opinion as was shown in these public comments on Dr. Deaver's paper, there is indicated an appreciation of the value of radium therapy on the part of the profession that is far greater than that accorded to it by Dr. Deaver. That radium has a certain value in the treatment of cancer can hardly be denied by any fair-minded man who is at all conversant with the vast amount of clinical evidence which has accumulated in the last few years. Even Dr. Deaver, in his published address at any rate, tacitly credits radium with a certain amount of value as a therapeutic agent.

This discussion, unfortunate as it has been in many of its aspects, may prove finally to be of actual benefit if, as a result of it, investigations and researches are begun which result in answering more definitely the much-discussed question of the actual worth of radium as a therapeutic agent.

THE HAVANA MEETING.

For the past few years it has been the custom of the Association to leave the selection of the actual date of the annual meeting to its Executive Committee. At the Pensacola meeting not only was this precedent followed but the actual meeting place was left to the decision of this committee. Considerable sentiment developed at the Pensacola meeting to hold the 1922 meeting in Havana, Cuba, but as there were many points to be considered before final decision was advisable, the Association wisely delegated to the Executive Committee authority to investigate the advisability of meeting in Havana.

The committee has thoroughly looked into the matter and announced some weeks ago that Havana had definitely been decided upon. The selection of the actual date has not been possible until recently, owing to transportation problems, that had to be arranged for. The committee is now able to announce that the Association will meet on June 30. It may be necessary to put forward or back a day or so in this actual date as arrangements are completed. The Florida East Coast Railway will run a special solid Pullman train from Jacksonville to Key West, leaving Jacksonville on the 28th of June. Sailing connections will be made at Key West. The P. and O. Steamship Company will have a steamer sailing from Tampa on the same date for the convenience of those living in that section of the state. A special excursion rate of one fare for the round trip has been arranged. Hotel headquarters and more detailed transportation arrangements will be announced in an early issue of THE JOURNAL.

CASE RECORDS.*

(ANTE-MORTEM AND POST-MORTEM) AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES AT THE MASSACHUSETTS GENERAL HOSPITAL

EDITED FOR THE USE OF PRACTITIONERS BY

RICHARD C. CABOT, M. D., AND HUGH CABOT, M. D.

F. M. PAINTER, ASSISTANT EDITOR

CASE 6521.

An American shoemaker of fifty-six, entered October 21, 1920, for relief of twitching.

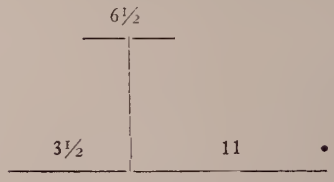
F. H. Both parents and one brother died of consumption. One sister died at the age of three of convulsions. His wife had had one miscarriage.

P. H. Thirty years ago he had a sore on the penis which disappeared after a few days. A physician told him it was due to handling leather. He worried over the possibility of syphilis, however, and three years ago went to two genito-urinary specialists, who examined his blood and treated him for syphilis. His intelligence and memory were poor. His best, usual and present weight was 150 pounds.

Habits. Good.

P. I. For a year he had had frequency $\frac{D\ 5\text{-}6}{N\ 5\text{-}6}$, and slight burning toward the end of micturition. Two or three months ago he had urgency, now better. Nine days ago he noticed more shortness of breath than usual on going up stairs, and at the time began to feel weak and run down. Dyspnea and weakness increased. Seven days ago he decided not to work next day. That evening his muscles suddenly began to twitch for no reason that he knew. He started to go to a doctor, but felt too weak. Next day a doctor called, but could not relieve the twitching, which had persisted, not so marked when he was asleep, but continuous day and night. He completely lost his appetite. His bowels were constipated, as usual. His urine had been somewhat reduced in amount. The day of entrance he vomited once, yellowish liquid.

P. E. A well-nourished man showing



rapid twitching of tongue, neck and shoulders with his respiration about 40 a minute. Head, throat and lungs negative. Apex impulse of heart seen and felt in 5th space 11 cm. to the left. P2 equal to A2. Soft blowing systolic and diastolic murmurs at the apex. Pulses of high tension. Artery walls palpable. Brachials tortuous. Systolic *B. P.* 190, diastolic 90. *Abdomen, genitals, extremities* negative. *Rectal examination.* Prostate large and slightly irregular. *Pupils* slightly irregular, otherwise normal. *Fundi.* Impossible to examine well. Seemed normal. *Reflexes.* Knee-jerks hypertonic. Babinski and Oppenheim suggestive.

T. 96.4°-103°. *P.* 81-122. *R.* 17-32. *Urine.* ℥ 14-20 when recorded. Sp. gr. 1015-1016. Cloudy and alkaline at both of two examinations. Loaded with red and white blood corpuscles at the first. 20-30 white and 15-20 red at the second. The slightest possible trace to a trace of albumin at both. An inch of mucus in the bottom of specimen bottle at the first. *Renal function.* No color. *Blood.* Hgb. 50%. Leucocytes 21,400-18,200. Polynuclears 85%. Reds 2,020,000. Marked achromia, slight anisocytosis and poikilocytosis. Platelets practically absent. *Non-protein nitrogen* 120 mgm. per 100 c. c. of blood. *Wassermann* negative. *Lumbar puncture.* 10 c. c. of clear fluid. Pressure not increased. Six cells. Alcohol positive. Ammonium sulphate and Wassermann negative. Gold solution ± ± 1 2 2 ± ± 0 0 0. Luetic zone tending toward chronic. Total proteids 80 mgm. per 100 c. c.

The patient was given a diet of soft solids; no medication except homatropin 1% one drop in each eye and veronal gr. x. October 24 he suddenly went into coma and three hours later died.

*Published in THE JOURNAL OF THE FLORIDA MEDICAL ASSOCIATION with the permission of the Massachusetts General Hospital.—ED.

Case 6521.

By Dr. Richard C. Cabot.

Notes on the Record.

This is a somewhat interesting presenting symptom. One would know at once from his age that it was not chorea—chorea in the ordinary sense of that word when we use it without qualification. It might have been a hemiplegic chorea—a bad term, which has currency, however—the twitching to be observed after an apoplectiform shock. It might be the tremor of old age. It might be the tremor of alcoholism. It might be the tremor of lead poisoning, or of mercury, or of general paralysis of the insane. It might be the twitching of uremia. Those are the only possibilities that come to me as at all probable at the present moment.

We don't know whether the patient was exposed to the tuberculosis in his family, therefore that is not of much importance.

Apparently "he worried over the possibility of syphilis" for twenty-seven years.

We suppose this was twitching of all the muscles, not of any one part.

The suggestion of this history without the physical examination is more one of a uremic state than anything else that I can think of. At the same time I have never been consulted by anybody for twitching as the presenting symptom. It has generally been a late or a slight symptom. If this turns out to be uremia with twitching as the presenting symptom it will be the first time I have seen that come as the thing the man complains of.

The picture at entrance is a perfectly new one to me.

He had a pulse pressure of 100. I suppose there was a gradual rise of temperature towards death. His respiration at entrance is stated to be 40, so at some time it must have been 40. It may have been due to the excitement of being examined.

We cannot say that the urine has a fixed specific gravity because we have only two examinations. That is not enough to get any idea from. He has a zero renal function. I have never known that unless the kidneys were practically destroyed or put out by some agent like a stone or obstruction.

He has marked anemia.

Differential Diagnosis.

I come back to my original guess, that his twitching was of a uremic nature, although I have never seen it confined to the head and neck in that way, or known it to be the presenting symptom. We have evidence of intracranial disease, but it does not seem to me that we have any evidence of localized intracranial disease. Therefore a toxic origin is suggested, and confirmed as I see it by the findings in the urine. I believe then that his kidneys are largely destroyed. What is the matter with them?

He has blood and pus in his urine. He has had bladder symptoms. We do not know much about his prostate, but it seems to me more than probable that there is an inflammatory element as well as very possibly a true nephritic element in the destruction of his kidney function. He has a high systolic blood pressure and a rather low diastolic blood pressure.

He is stated to have had a diastolic murmur. What importance are we to put upon that? Nothing more is said about that diastolic murmur later. We know that the aortic second sound is well heard. We have a negative Wassermann. We have no evidence of a very big heart or of any anginoid attack such as syphilitic aortitis producing a diastolic murmur might easily also produce. I do not see that we can rule out syphilitic aortitis. His history has something in it that suggests syphilis even though his Wassermann is now negative. But I do not for a moment believe that if he has any syphilitic artitis it had anything to do with his death, and I am inclined to say it is not present in spite of the diastolic murmur. I doubt whether any cause for that will be found even post-mortem. Diastolic murmurs heard only at entrance and not later commented on usually show post-mortem no evidence why they should have been present.

He is only fifty-six. How much arteriosclerosis shall we attribute to him and to his kidneys? More, I should say, than the average man of fifty-six has, because of the suspicion which we cannot prove, but which remains with us that he has syphilis, which increases the amount of arteriosclerosis, especially cerebral, that any individual has a right to at a given age.

What about stones in his kidneys, hydronephrosis, pyonephrosis, and gross lesions of that kind? I do not see that we can exclude any of them. Perfectly silent stones and perfectly silent hydronephrosis and pyonephrosis are possible. He has had no pain, but one can have stones without pain. No tumor has been felt, but we can have these lesions without palpable tumors. At the same time I think those are rather improbable suggestions. I think that if stone or hydronephrosis or pyonephrosis were present to any extent we should probably have got more in our physical examination. We have nothing to suggest one kidney rather than the other in any local lesion. If he has anything the symptoms would point to its being bilateral.

He has a marked anemia which we can easily suppose to be secondary to a nephritis producing a uremic state. We cannot so easily assume that it is due to an inflammatory process like stone destroying the kidney function. The presence of anemia therefore inclines me to believe that there is considerable nephritis. The points against considerable nephritis are the low diastolic blood pressure, which may be accounted for by aortic regurgitation—on the whole I am voting against that—and the absence of a demonstrably big heart. I do not say a big heart, because Dr. Richardson will probably tell us it is big, but we have not the facts to base any such idea in this record.

My guess is, therefore, that he will be found to have a chronic nephritis, with hypertrophy and dilatation of the heart; on top of that a genito-urinary infection probably starting in a prostatic obstruction, but not going to the point, I should suppose, of hydronephrosis, and not involving any stone. The rest of the body I do not see why we should accuse. In his lungs and abdominal organs otherwise nothing special is brought out.

It is a curious little point which I will merely mention, though I cannot explain it, that with marked leucocytosis and secondary anemia he has practically absent platelets. If true, that is a curious observation. It is exactly the opposite of what we should expect.

I should like to go on record that Dr. Richardson will probably say there is no evidence of syphilis in this body, and that that will not rule out syphilis. It is perfectly possible for syphilis to exist and to have killed a man or assisted in his death very materially without there being any proof of it at postmortem examination. I do not believe there will be any.

CLINICAL DIAGNOSIS.

(FROM HOSPITAL RECORD.)

Chronic nephritis.
Uremia.
Hypertension.
Myocardial insufficiency.
Cystitis.

DR. RICHARD C. CABOT'S DIAGNOSIS.

Chronic nephritis.
Hypertrophy and dilatation of the heart.
Genito-urinary infection.
Arteriosclerosis.
Syphilis?

ANATOMICAL DIAGNOSIS.

1. Primary fatal lesions.
 - Nephrolithiasis, bilateral.
 - Pyonephrosis, bilateral.
2. Secondary or terminal lesions.
 - Arteriosclerosis.
 - Fibrous myocarditis.
 - Infarcts of lenticular nuclei with small cyst.
 - Chronic endocarditis of mitral valve.
 - Hypertrophy and dilatation of the heart.
 - Focal tuberculosis of left lung.

DR. RICHARDSON: The great lesions in

this case were in the kidneys. Each kidney showed marked dilatation of the pelvis and calices and was filled with stones and pus.

Dr. Cabot: I am glad that I considered the possibility, although I missed it.

Dr. Richardson: The heart showed moderate hypertrophy—460 grams. There was no evidence of syphilis anywhere. The aortic valve was normal. The aorta showed slight sclerosis. There was an area of fibrous myocarditis in the wall of the left ventricle and some sclerosis of the coronaries.

Dr. Cabot: There was no evidence of syphilis?

Dr. Richardson: None. The brain was opened and there was nothing remarkable about it except for a small cavity in the region of the lenticular nucleus a few millimeters across, and some gray-red mottling—small infarcts with cyst. In one lung there was a small focus of caseous pneumonia.

Dr. Cabot: I should like to ask Dr. Young whether there is any way I could have got on to those stones?

Dr. Young: I think not, because I have seen a great deal of pus where so far as we ever knew there was nothing but nephritis. And there have been a great many cases where stones were present and there was absolutely nothing in the urine.

Dr. Cabot: I suppose if he had lived and been in better condition the mere fact of pus would have led to X-ray examination and cystoscopy.

Dr. Young: I think pus ought to lead to further examination, because although it can be present with no other condition but nephritis back of it, it is much more apt to mean a surgical condition of the kidneys.

Dr. Cabot: Of course you would naturally X-ray him, and X-ray would have brought out the stones of course. What is the proportion of silent stones to all stones in the kidneys?

Dr. Young: I do not know. It is very slight, however. Most of them give some evidence in some way or other.

Dr. Cabot: I have been impressed with my own recent experience, which it seems to me has been the other way here. Most of them have been silent stones. By noise I mean pain.

Dr. Young: I think sometimes people come because an insurance examination or something of that kind has directed attention to pus in the urine. I think the stones have been silent otherwise.

Dr. Cabot: You were using "silent" to mean no evidence of any kind?

Dr. Young: Silent so far as the patient is concerned.

REVIEWS FROM CURRENT LITERATURE

AMMONIA DERMATITIS.

Cooke, J. V.: "The Etiology and Treatment of Ammonia Dermatitis of the Gluteal Region of Infants." American Journal of Diseases of Children, November, 1921.

The author refers to the article previously written on this subject by Southworth, Zahorsky and Brennemann.

The scalding about the gluteal region has been attributed to an excess of ammonia in the urine, for which dietary indiscretions have been held reasonably responsible. The washing of the napkins in an alkaline soap has measurably shared in the responsibility for this condition.

The author reports thirty-one cases of ammoniacal diaper in which complete bacteriological examinations of the stools were made. He finds invariably present a nonmotile, gram-positive bacteria which he denominates as the bacteria ammoniagenes. This organism possesses the property of splitting up urea, with the consequent formation of ammonia. The frequent soiling of the gluteal region with feces gives an opportunity for this organism to contaminate the skin of this area. With the wetting of the napkin by urine, an excellent culture medium is furnished and the contaminating bacteria

multiply rapidly. Only urea-splitting bacteria may produce ammonia, with the consequent irritation of the skin.

After numerous experiments the author has outlined a definite and apparently satisfactory line of treatment. First, he advises avoidance of a diet rich in fats or in proteins, since dietary indiscretions may always play an important part in this condition. He advises that the napkins, after being washed, should be soaked in an antiseptic solution which inhibits the growth of bacteria. The solutions given are: 1-5000 mercuric chloride in water, 1-20 boracic acid in water, or 1-5000 mercurial iodide solution. After the napkin has been soaked in one of these solutions, it is allowed to dry and is employed in the usual manner. After using such a napkin for a very few days the ammoniacal condition of the urine disappears and, likewise, the resulting scalding of the gluteal region.

KERATITIS.

Macleish, A. C.: Keratitis Caused by Excessive Sugar Ingestion, American Journal of Ophthalmology, Vol. V, No. X.

According to the writer, functional disturbances of the eye, due to disorders of the intestinal tract, are frequently met with in various forms. Among the active inflammations from this source are conjunctivitis, blepharitis, scleritis, choroiditis, retinitis and keratitis, and there is much evidence to show that glaucoma, especially chronic glaucoma, may be caused by absorption of toxins from an inactive lower bowel. Scotomata, enlargement of the blind spot, retinal hyperesthesia and other disturbances, due to faulty innervation, are met with. These conditions may be caused by the slow absorption of toxins over a long period, or by the absorption of a large amount of toxin suddenly into the system.

One of the chief food substances causing trouble, especially in the young, is sugar, for it is well known that the system in childhood is especially intolerant to an excess of sugar.

We frequently see phlyctenular conjunctivitis, blepharitis, facial eruptions, etc., due to over-indulgence of sugar in children, and very often this condition clears up rapidly when sweets are withdrawn from the diet. Interstitial keratitis, however, due to this condition of over-indulgence of sugar, has rarely been observed.

The writer reports a typical case of interstitial keratitis with pronounced photophobia, blepharospasm and lachrymation. The corneal parenchyma was involved, but no phylctenules were present. Wassermann negative. It was found that the child had been eating an enormous amount of sugar. This was stopped and only mild remedies used, and the case got entirely well very quickly, but had a relapse when the child indulged in sugar again. Made a rapid recovery again after the withdrawal of sugar. This case is very unusual and interesting.

Perhaps a closer study of the etiology of some cases of interstitial keratitis might bring out a similar cause. It is well to bear this etiological factor in mind in cases of this kind.

TREATMENT OF SCARLET FEVER.

Webster, G. H.: "Further Observations on Treatment of Scarlet Fever With Immune Human Serum." Journal A. M. A., October 29, 1921.

Literature bearing on this subject from 1897 to the present time is previously recorded.

Excellent results are seen in the treatment of prolonged toxic cases of scarlet fever by the intramuscular injection of serum or blood obtained from patients convalescing from scarlet fever. The donor should be a convalescent in the fourth or fifth week of the disease; should be free from suspicion of tuberculosis, and his blood should give a negative Wassermann. Blood from a convalescent who has experienced septic complications should not be used. The blood may be drawn into a sterile bottle and allowed to stand until the clot has separated. The serum may be poured into bottles of 30 c.c. capacity and preserved with .3 per cent

tricresol until ready for use. Citrated blood may be employed, provided it is used immediately after withdrawal. From 60 to 90 c.c. are injected intramuscularly, and gratifying results are to be expected within a few hours.

INFANTILE SCURVY.

Blake, Eugene M.: Ocular Changes in Infantile Scurvy, American Journal Ophthalmology, Vol. IV, No. X.

After describing well-known symptoms of infantile scurvy and mentioning the age of most frequent occurrence, four-fifths of the cases occurring between the ages of six and fifteen months, Dr. Blake goes on to say that occular symptoms occur in about 10 per cent of the cases. The most prominent and constant one is exophthalmos, due to hemorrhage from the orbital plate of the frontal bone, or into the areolar tissue of the orbital cavity. There may be sub-conjunctival hemorrhages and, very rarely, hemorrhages of the retina. Exophthalmos comes on suddenly and may be, at times, very pronounced.

The vision is not affected unless there are retinal hemorrhages. The motility of the eye is limited according to the amount of proptosis. Exophthalmos occurring very suddenly in an infant is generally due to scurvy, and sometimes is one of its earliest symptoms, occurring before any other well-marked symptom of scurvy. Every case of sub-conjunctival hemorrhage in infants, except in cases of pertussis, should always make us think of scurvy as being the possible cause.

Dr. Blake reports a case where all the ocular symptoms were present and the diagnosis of scurvy confirmed by a pediatrician. Recovery followed proper feeding.

The pediatricians and general practitioners would do well to bear these symptoms in mind, and as exophthalmos is such a prominent sign it is always noted soon after its occurrence, and its recognition as a symptom of scurvy may lead to its early diagnosis and appropriate treatment.

CLINICAL CASE.

H. B., white, male, age 43, machinist, past history negative. Was referred to me on June 6th by Dr. R. S.

I found his face badly burned, secondary degree, from the explosion of a gasoline drum on which he was working. The eyebrows and lashes were singed, and the eyes presented the appearance of acute conjunctivitis, oedema of the lids, photophobia and lachrymation.

After a careful examination I gave a favorable prognosis for a speedy recovery. However, after a few days the eyes became very much worse. Keratitis and a severe retinitis developed, and the most intense photophobia and blepharospasm that I have ever seen, and were very persistent, resisting all ordinary remedies for about a month. In the meantime, the skin lesions, under Dr. S.'s care, had entirely healed.

At this time I gave him a parenteral injection in the abdominal wall of 6 c. c. whole milk, which had been boiled for five minutes, then cooled to blood heat before injection. The result was magical. The next day his photophobia and blepharospasm, and all other symptoms, were very much ameliorated. The improvement was rapid and continuous.

I gave him another parenteral injection three days after the first one. The patient's eyes continued to improve rapidly, and he was soon able to dispense with the thick, dark bandage that he had been wearing on account of the intense photophobia. His vision also rapidly improved, and he was able to resume his ordinary work about a week after the last injection.

This case is of interest from two standpoints: First as to prognosis in burns about the face, we should not give a too favorable prognosis at first, because severe inflammation of the internal eye may develop several days after the burn. Second, parenteral injections of milk proved their superiority to all other remedies in alleviating the severe keratitis and retinitis which were present.

I have used this remedy in several other cases since, and I am firmly convinced that it is a valuable remedy in any case where photophobia and blepharospasm are pronounced symptoms. W. H. A.

PROPAGANDA FOR REFORM.

(*Continued from page 125*)

genuine effort was being made to comply with the request of the Council, Electrargol was retained for the 1919 edition of the book. A reply was received from Comar & Co. in 1919. This reply was a refusal, with one exception, to modify the claims objected to. In view of this refusal to modify the claims, with one exception, the Council directed the omission of Electrargol from New and Nonofficial Remedies. (Abstracted from Reports, Council on Pharmacy and Chemistry, 1920, p. 58).

PUBLISHER'S NOTES

ADRENALIN.

Adrenalin has been associated with the name of Parke, Davis & Co. for so many years that one suggests the other. It was that firm which met the challenge of therapeutic progress in 1900 by directing its research work to the isolation of the active principle of the suprarenal gland, and which early in 1901 announced the success of its investigations and experiments. Since then Adrenalin has been universally recognized as a P. D. & Co. product— which it still continues to be.

A neat little brochure on "Adrenalin in Medicine" is offered by the manufacturers to interested physicians.

COUNCIL REMEDIES.

One of the most important developments in the medical history of the past five years has been the work of the Council on Pharmacy and Chemistry of the American Medical Association. Their examination and analysis of newer remedies has done much to advance the standard of manufacturing pharmacy; it is safeguarding the doctor against inferior products, and indicating those for which misleading claims are made.

The co-operation of the doctor in using and prescribing Council-Passed products is making this work more effective each year. The co-operation of the manufacturers is, also, an encouraging recognition of the value of this service. A partial list of the Council-Passed Remedies, manufactured by The Abbott Laboratories, Chicago, appears in this issue. These are obtainable on prescription at the leading pharmacies, or may be obtained direct, as desired.



Calcreose

In Bronchitis and Tuberculosis

Calcreose is particularly suitable as an adjunct to other remedial measures. **Calcreose** contains 50% creosote in combination with calcium. **Calcreose** has all the pharmacologic activity of creosote but is free from untoward effects even when taken in large doses for long periods of time.

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THE MALTBIE CHEMICAL CO., NEWARK, N. J.

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ORIGINAL ARTICLES

THE PHYSIOLOGICAL BASIS OF RADIUM THERAPY.*

GERRY R. HOLDEN, M. D., F. A. C. S.,
Jacksonville, Fla.

The pyhsiological basis for radium therapy lies in the reactions which take place in the living organism as a result of exposure to the rays emitted from a preparation of radium.

Without accurate knowledge of these reactions and the laws which govern them, scientific practice of radium therapy is impossible. Moreover, on account of the ever-increasing importance of this branch of therapeutics, a certain familiarity with its fundamental principles must be part of the general knowledge of every well-informed practitioner.

THE REACTIONS CAUSED BY RADIUM.

The reactions which may occur after exposure to radium are of three varieties: First, local changes in the tissues; second, alterations in glandular functions; third, alterations in the metabolism of the organism as a whole. The local tissue change may either be of the individual cells themselves, or of the part as a whole.

Although it is possible to obtain a caustic effect upon living tissues by exposing them to radium radiation, such a gross death of tissue is not of the greatest value in this therapy, neither is it in any way an effect peculiar to such radiation.

LOCAL REACTION.

The characteristic local reaction of radium consists in the alterations of the individual cells and tissue elements of the parts. It is essentially microscopic in nature, oftentimes occurring with little or no gross evidence of reaction. It can only be understood by carefully studying the series of changes which may take place in a part after its exposure to the active rays.

The first effect which may be noted after such exposure is that of stimulation and irritation of the part, beginning within a day or two after exposure, and gradually increasing in intensity. The area of application may be visibly reddened and congested. Microscopically, the capillaries are dilated. There is an infiltration of serum into the tissues, together with an invasion of leucocytes and small, round cells.

This irritation, provided the radiation has been of sufficient intensity, may go on to an acute inflammatory process and terminate in necrosis of the tissue as a whole. This caustic effect is not as a rule desirable, and dosage is usually so calculated that such results are not obtained.

With the dosage insufficient to cause gross death of tissue an acute inflammatory condition is not reached, and the congestive process slowly subsides. The microscopical picture during the first week or so shows nothing different from the ordinary picture of acute congestion. At the end of this time, however, certain changes in the epithelial cells of the part begin to make their appearance. The cells enlarge, and the protoplasm presents a beginning vacuolation. The nuclear figures become marked, hyperchromatosis appears, and the nucleus enlarges. Both nucleus and protoplasm begin to degenerate in from two to three

*Read before the forty-eighth annual meeting of The Florida Medical Association, at Pensacola, May 10-11, 1921.

weeks after exposure. The invasion of small, round cells and polynuclear leucocytes become marked and the detritus from the broken down cells is carried off by phagocytosis.

Accompanying these changes in the epithelial cells, there are certain important changes taking place in the connective tissue elements. There is an apparent stimulation of the connective tissue cells, with formation of fibro-blasts and new connective tissue. In two or three months after radiation we may find the spaces formerly occupied by epithelial cells filled by this new formation of connective tissue. In the course of time this tissue becomes dense. Fairly well supplied with blood vessels at first, these later disappear, and there is finally formed a sclerotic mass of dense, fibrous tissue, a characteristic result of radium radiation.

Another characteristic result is seen in the changes which take place in the blood vessels. At first there is a congestion. The capillaries and small blood vessels are dilated and engorged with blood, and there is an exudation of serum in the tissues. In a week or ten days after exposure the vessel walls themselves show a leucocytic infiltration of the wall. The intima is swollen and thickened. Endarteritis and endophlebitis result, leaving finally a reduction of the lumen in the larger vessels and an obliteration of smaller vessels and capillaries.

These changes in the blood vessels are important factors in causing the dense sclerotic conditions found in tissues after radiations.

EFFECTS ON GLANDS.

The second variety of reaction caused by radium exposure, alterations in glandular functions, results from degenerative changes of the epithelial cells of the gland itself.

In this process of degeneration we have the same series of microscopic changes taking place as we described under local effects of radium rays. In the ovary, for example, after exposure to a lethal dosage, we have first the congestion and swelling of the tissues, followed by the death and disappearance of the epithelial cells, with connective tissue growing in to occupy the space; and finally in a few months the ovary is reduced to a firm, fibrous mass with no vestige of ovarian epithelium left. As a natural result, the physiological action of the glandular cells is lost.

GENERAL EFFECTS.

Changes which radiation causes in the physical economy of the body as a whole are most interesting from the scientific standpoint, and very significant from the standpoint of practical therapeutics. A great deal of work remains to be done on these points, and from the results of these studies valuable therapeutic help will undoubtedly be obtained.

We will mention but a few of these reactions. Changes in the blood are the most frequent and striking of these phenomena. Diminution in the white corpuscles is a constant feature when sufficient radiation has been given. This takes place not only when the percentage is greatly increased in pathological conditions, but is also seen in the blood of normal individuals exposed to its radiation. This may be caused not only by one or two massive doses, but also by frequent short exposures to the effects of the rays. Reduction in the hemoglobin and red cells is frequently found, especially after repeated exposures to small amounts of radium. Blood pressure is reduced by radiation, far more in proportion when it is abnormally high, but also to a certain extent in the normal person.

Radium is a general depressant of the nervous and circulatory systems when given in large dosage. In the majority of cases of massive radiation we have this evidenced by a marked asthenia and depression. Acidosis is said to be a result of even moderate radiation, causing nausea, oftentimes most extreme.

GENERAL PRINCIPLES OF RADIUM THERAPY.

Such then, briefly stated, are the most important effects which may be caused by exposure of the living organism to the radium rays. In discussing them with reference to their practical bearing on radiotherapy, we shall devote more time to the first variety, the local effects caused by the ray. Upon this effect of the radium ray depends the majority of the work with which the average man is familiar as radium therapy.

In describing the effect of radium on the epithelial cells, nothing was said as to whether the cell under consideration was normal or pathological. As a matter of fact, there is no difference, theoretically, in its action upon the normal or pathological cells. It will kill either of them if it is given in strong enough dosage. But, broadly speaking, the cancer cell is more easily killed than the normal cell. While conversely, radiation which is a lethal dose for the cancer cell may do no harm to the normal epithelial cell.

There is also a great difference in the sensitiveness to radiation of various normal cells. Skin is more resistant than the mucous membrane of the mouth, while the mucous membrane of the bladder and rectum is more sensitive than either. The vagina is more resistant even than the skin, fortunately for the urgencies of our technique in uterine cancer.

Pathological conditions also may be graded as to their sensitiveness to radiation, and such studies are most important in selection of cases, dosage, and prognosis.

We now see why it is possible to give a dosage which will kill the cancer cells lying in a certain organ without destroying the normal cellular matrix in which these cells are lying, even though both pathological and normal cells may be killed.

The varying resistance of tumors and tissues is a subject concerning which we have a certain amount of knowledge, but on which a vast amount of work still needs to be done. A general principle which is of great value is the so-called law of Bergonie and Tribondeau, first given out by them in 1905 with reference to the action of the roentgen rays on the living cell, but applying equally well to the penetrating rays of radium. This law states that immature cells and cells in an active state of division are more sensitive to radiation than are cells which have already acquired their fixed adult morphological or physiological habits. A rapidly growing carcinoma or sarcoma, therefore, containing cells of an embryonic type, in a state of rapid subdivision, is much more sensitive than are the adult cells of the matrix in which such tumors lie. It does seem at first thought as if there must be a peculiar selective action when we consider how vast cancer masses may melt away in a few weeks, leaving practically a normal surface behind, with no injury to any tissue other than the pathological tissue. But we know now that increased dosage would attack the normal tissue just as certainly as it has the pathological. To argue a selective activity is therefore unnecessary and against the facts.

Upon the varying resistance of tissues, both normal and pathological, depends the question of dosage, or the amount of radiation given to a certain area. Two errors may be made here, either that of giving too much, or, what may be even worse, giving too little. Over-dosage gives a lethal dose to the tumor, but it may also kill the normal tissue matrix in which the tumor lies and a terrible condition arises therefrom. Insufficient dosage, however, may be even worse than over-dosage, because its effect is that of stimulation. As was said above, the initial effect of radiation is always a stimulation. It is shown as a mechanical irritation, accompanied by an increased blood supply to the part and an increase in cellular growth. When a therapeutic radiation has been given, this stimulation is succeeded at once by cell inhibition, and the temporary stimulation is of no harm. If the dosage is so small that we do not get a lethal effect upon the cells,

we may have no cell inhibition at all, and the only effect that of initial stimulation. In the case of rapidly growing inoperable cancer, it is evident what deleterious results an insufficient dose would give.

The time at which the various microscopical changes take place is of practical importance. The first evidences of cell death appear about a week or ten days after lethal radiations. It is a week or two later before the cells are disintegrating and their debris being carried off by phagocytes, while the new formation of connective tissue does not reach a quiescent stage of sclerosis for several months later. Results, therefore, from radium therapy are not immediate. A certain period of time must elapse before any visible result can be noted, while from two to three months are required before the height of the effect can possibly be expected. It is of great importance that these facts be understood, not only by patients undergoing treatment but by the profession at large.

The initial stage of congestion is also of significance. It must be realized that in glandular radiation, as in cases of menorrhagia, or exopthalmic goitre, the conditions may be worse temporarily after radiation. Also the initial period of congestion is of importance in considering the combina tion of radium therapy and operation. If radium is employed before operation, then the operation should be so timed that it will not take place at the height of congestion. In other words, if not done within forty-eight hours after radiation, it should be postponed until ten days or two weeks afterward, or until the initial congestion has subsided.

The formation of connective tissue, mentioned as a characteristic end result of radium exposure, also has an important bearing on the question of operation. If operation be delayed too long it is made more dangerous and difficult on account of this dense fibrous transformation.

The formation of connective tissue, together with the reduction in the blood supply, undoubtedly is of therapeutic value in certain cases. In some cases, cervical cancers are apparently cured when we feel that it was impossible for all the outlying cancer cells to have received a lethal dose of radiation. Also, in examining specimens removed at periods after radiation the following microscopic picture has been found: cancer cells, not dead but apparently in a state of inhibition, lying as little islets surrounded by areas of sclerotic, connective tissue almost destitute of blood vessels. Apparently these cells were injured by radiation, though not killed; with their source of nourishment depleted on account of the impoverished blood supply they lay dormant in the bed of dense connective tissue. Initial injury, followed by impoverishment in blood supply.

When we consider the practical application of the effects which radiation produces on glandular function and upon the general body economy, we take up a wholly new field of radium therapy, and a field in which lie some of the great future triumphs of this branch.

However, inasmuch as this subject is in a most formative stage, we will in this paper mention but a few of the more important applications and hint at some of the other possibilities.

When we are considering the therapeutic value of the effects which radium has upon glandular functions, probably the ovary should be mentioned first. The ovaries are peculiarly sensitive to radiation. By graduated doses we can either reduce ovarian activity in the younger woman or cause its entire cessation in the older woman. This can be done easily, with a minimum of pain, discomfort or danger. A whole realm of gynecological conditions has, therefore, been removed from the surgical field.

The ovary was the first gland treated by radium therapy. Recently practical application, with excellent results, have been made in other conditions. Certain forms of

goitre yield readily. It is absolutely the best treatment for persistent thymus gland in children. It is utilized in Hodgkins disease, while radiation over the spleen and ends of the long bones give results in some cases of leucaemia.

I also wish to mention in passing that tuberculous glands, non-suppurative, are no longer in the field of surgical conditions, such uniform satisfaction being given by radiation.

Concerning the utilization of the effects upon the general economy of the body, the reduction of blood pressure, changes in the blood, etc., there is little to say at present. Except in the treatment of leukaemia, those results of radiation have been employed but little in this country, and little scientific work has been done along this line. That use will be made of these striking characteristics in the therapeutics of the future, there can be but little doubt.

Discussion.

Dr. H. B. McEwen, Pensacola:

Dr. Holden has covered his subject most thoroughly, discussing the microscopic changes taking place after exposure to radium, the effect of radiation on the epithelium, upon blood vessels and cancer tissue, and has covered the subject so nicely that about all there is left to say is, *he has said it.* I might mention the fact that it has been found by biologic experimentation that the lethal cancer dose is approximately 90 per cent of the lethal epithelial dose, this giving us a margin on which to kill the cancer cells without doing permanent damage to the surrounding normal tissue. The action of radium radiation upon the angiomas demonstrates very prettily the action upon the blood vessels, the endarteritis and endophlebitis resulting from the exposure produces the cure, and this may be had without macroscopic reaction. Some writers think that in addition to the hystological changes produced in the tissues by radiation, that there is also a chemic one which it may pay to investigate.

THE TREATMENT OF CUTANEOUS GROWTHS WITH A CONSIDERATION OF RADIUM AND X-RAY THERAPY.*

J. L. Kirby-Smith, M. D.,
Jacksonville, Fla.

Gentlemen: In a paper of this scope the time allotted me will not permit the giving of the etiology or histo-pathology of cutaneous growths. It will be my purpose, then, to deal only with the treatment of the common lesions that are found on the skin. Each condition will be considered separately, and the measures that are found by the writer as best suited will be given; also some of the measures recommended by other dermatologists. The following conditions will be considered:

Naevus, the common birthmark (or "port wine" birthmark).

Naevus Pigmentosus, or pigmented mole.

Naevus Angiosum, or angioma.

Small Fibroma, or mole.

Keloid (scar tissue tumor).

Verruca Seborrhoeica, or "scurfy spots."

Verruca Vulgaris, or common warts.

Verruca Planum, or flat warts.

Epithelioma:

- Rodent Ulcer Type.
- Superficial Type.
- Papillary Type.
- Deep-seated Type.
- Skin Cancers.

Next in order is a brief description of five measures that are indispensable in the successful treatment of cutaneous growths:

Carbon Dioxid Snow.

High Frequency Spark.

Electrolysis.

X-Ray.

Radium.

No doubt, some of you are familiar with all of these measures. In case you are not, however, it will not be amiss now to consider each.

*Read before the forty-eighth annual meeeting of The Florida Medical Association, at Pensacola, May 10-11, 1921.

Carbon Dioxid Snow: CO^2 snow is obtained in an ordinary 60 to 100-pound carbonic acid gas cylinder in this manner: The cylinder is placed in a horizontal position, a chamois skin is wrapped and tied securely around the outflow cock, the release valve is unscrewed and the gas allowed to flow, and when the pressure is released the gas solidifies in the chamois skin. This snow is compressed or hammered into the desired shape; or further, may be cut or trimmed to the desired size for an application to the growth which is to be treated.

The freezing is brought about by applying the proper amount of pressure; from 40 to 100 seconds is the time necessary to freeze the growth completely, of course, depending on the size and location of the same. The after treatment is to protect the blister that forms. Aside from the burning sensation immediately following the treatment, no pain is experienced from the freezing operation.

The High Frequency Coil: The high frequency coil will deliver a spark that can be used for dermatological purposes. Using an aluminum point anode, small neoplasms can be destroyed at one sitting. The extent of the destruction of tissue is regulated both by the rheostat on the coil and the distance between the growth and the end of the aluminum point. Special cords and handles are made for the use of this apparatus.

Electrolysis: For this, the requisites are 8 to 10-cell connected battery, with sponge and small steel needle, with holder and cords for same. The sponge end is connected to the positive pole of the battery, and the needle with holder and cord to the negative. The fine needle is thrust through the base of the growth and the current allowed to pass through for a few minutes until the tissue shows blanching. Slight pain is experienced, and if the growth is transfixed in several diameters the lesions will be completely destroyed, leaving a very slight scar.

X-Ray: In using the X-ray for the treatment of cutaneous growths, it is needless to state that a familiarity with this measure is necessary. The success of the treatment is dependent upon one's knowledge of the proper screening and the protection of untreated parts. With an X-ray machine giving a 6-inch spark, with due consideration to distance, milliamperage, time, protection and screening, one can successfully remove, in one to three treatments, most of the cutaneous growths.

Radium: Not less than 10 milligrams of radium element in a flat applicator (full strength) can be used to remove successfully lesions of an epitheliomatous character. As in the use of X-ray, a working knowledge of screening and protecting parts is necessary. Certain rules are laid down by experience as to the time of radium treatment exposures. Simple keratatic spots would require only a few minutes of unscreened radium treatment, while lesions like keloids would require 6 to 8 hours' continuous treatment, repeated on subsequent days to a total of 20 to 24 hours.

Naevus: In the treatment of naevi (especially the ordinary "port wine" birthmark), two things are to be considered: size of the growth and its location. From a cosmetic point of view, the location is the most important consideration, especially when the naevus is situated on the face or uncovered parts. Of all the measures at my hands, CO^2 snow and radium have given the most satisfaction in the removal of this variety, the former giving the best results.

Naevus Angiosum: This type of birthmark (naevus angiosum) is often spoken of as angioma. Freezing with CO^2 snow has given better results in my hands than radium. Especially has this been so in deep-seated cavernous type. The freezing produces slight, if any, destructive action on the outer layer of the skin, while the effect of the freezing, after one or more treatments, gradually produces the closure of the mass of blood vessels in the angioma, and very shortly is noticed a decrease in the size of the tumor and a disappearance of the

purplish or reddish discoloration of the skin. The only objectionable feature of this treatment is the formation of a large blister or bulla, which occasionally may be carelessly or accidentally ruptured by the patient or the nurse, with slight superficial scarring resulting. But, all in all, this scarring would be less than that produced by heavy radium treatment insufficiently screened.

The Kromayer quartz lamp has been used with good results.

Naevus Pigmentosum: Naevus pigmentosum, or pigmented mole, is the most common type of naevi seen. When they occur on the face or on the uncovered parts of the body, we are oftentimes called upon to remove these unsightly lesions. Up until a few years ago the technique for treating these growths was in such a poor state of development that patients preferred to leave them untreated. For this reason, and also that some people were led to believe that this particular type of growth was a progenitor of a malignant cancer, naturally they deferred a visit to a physician for the removal of these disfiguring marks. I have seen several cancers develop from repeated applications of strong acids or other caustics for the removal of these growths. In some locations, unquestionably surgical is the method of election for the removal of this type of pigmented mole which has frequently been irritated and has been subject to trauma. For a number of years the writer has had the opportunity of treating successfully this type of naevus with CO^2 snow; also having used the fulguration with an aluminum point from a high frequency current. In the past few years, however, X-ray, or radium, have given better results, both cosmetically and permanently.

Small Fibroma: Under the heading of fibroma will be placed that type of small, fleshy growths which are at times hard and fibrous tumors. They are frequently found on the face and other parts of the body. These growths are often spoken of as moles. When existing on covered parts of the body which are not subject to irritation, they produce no objective or subjective symptoms that would bring the patient to the doctor, but on the face they produce a picture which is oftentimes spoken of as "unsightly moles." In the small pedunculated type, a removal is easily accomplished by electrolysis. A fine epilating needle attached to the negative pole of the battery is passed through the pedicle, and a few moments of a 10-celled current is sufficient to destroy the growth completely. When these lesions are of large size, electrolysis is not practical, but the application of a spark from a high frequency coil, using an aluminum point, at one sitting completely destroys the growth. In the case of a nervous patient, it is necessary to inject, beforehand, at the base of the growth, by a small hypodermic needle, a drop or so of novocain solution.

Keloid: The red and, at times, painful outgrowth from a scar is spoken of as the keloid. These growths, until recent years, have baffled the medical profession. An excision will be promptly followed by a return of the growth. At the present time the lesion is successfully treated with radium and to an equal extent with X-ray, well filtered and full dose.

Verruca Seborrhoeica: Under this name, no doubt, this condition is unfamiliar to you, but using the more common name, "scurfy spots," you will see where I am driving. This disease is known under several names. For instance, "old-age hardening of the skin," "scurfy spots," keratosis, seborrhoeica and sebaceous warts. Unquestionably, this type of cutaneous growth is most commonly met in middle age and elderly people, especially those who spend most of their time in the open. Exposed parts—the face, the neck and hands—are the most frequent places for the development of these growths. In themselves, omitting the cosmetic consideration, these lesions are of considerable importance. Especially is this true in the appearance of a sebaceous wart in the bearded region of a man who is

continually shaving over these parts. It is prone to develop into a superficial type of an epithelioma, due to continuous irritation.

For the treatment of verruca seborrhoeica, both radium and X-ray are the best measures. The latter is especially applicable in the occurrence of a number of these warty growths. One or more X-ray treatments, given in two weeks' time, just short of an erythema dose, will cause a prompt disappearance of these unsightly and uncomfortable lesions. For a number of years the use of tricloracetic acid, preceded by a slight curettement, produced good results. A few minutes' exposure with a moderate amount of radium, unfiltered, will promptly clear up a sebaceous wart.

Verruca Vulgaris: The treatment of common warts has no doubt baffled some of you doctors in your practice. After trying all of the simple measures, *i. e.,* caustics, scissors, karotolytic plasters, and after the "conjure" treatment, you gave it up as a "bad job." But, if the proper consideration were given this growth, you would realize that the treatment of a wart for a successful removal is not so simple as you would think. To get rid of a wart, the growth has to be thoroughly destroyed, and in destroying a wart you cannot do this by simply paring off the horny part and applying some acid to destroy it. You have to go further. The best and most rapid measure, at the writer's hands, has been by the high frequency fulguration. This measure will completely destroy the wart at one sitting. A nervous patient would require the injection of a local anaesthetic. In the occurrence of a number of large warts, covering part of the hands, for instance, both X-ray and radium give good results. From two to three weeks' time will be required for the disappearance of these warts.

Verruca Planum (Flat Wart): Occasionally you meet with this wart occurring over an extensive surface, sometimes on the backs of the hands and on the face, the latter location being very unsightly. Occasionally, the internal administration of full doses of arsenic will cause a prompt disappearance of the growths. Local treatment of this variety of wart is best obtained by X-ray, giving two treatments at intervals, screening so that an erythema is avoided.

Epithelioma: The treatment of skin cancers has resolved itself into two successful measures, from the standpoint of a dermatologist. In the first type mentioned, rodent ulcer, recurrences are often seen, but by applying radium or X-ray so that considerable tissue beyond the margins of the ulcer are rayed, recurrences are less apt to occur. This type of skin cancer is one so often seen developing around the base of a "scurfy spot." Unquestionably, any number have been cured by such simple measures as curettement, and caustics, and the use of cancer pastes. But both the X-ray and radium cause the rodent ulcer to heal rapidly, with slight scarring and with little or no discomfort to the patient.

The superficial type of epithelioma often develops from a pre-existing scar or an irritated mole or wart, making its presence known by a growth with a pearly-like border, at times a slight crateriform ulcer with scabbing, a tendency to bleed and some discomfort to the patient. This type of skin cancer, when early seen and at some locations, is to be removed with ease, with cosmetic results, by any number of measures, any of which, if applied properly to cause complete destruction of the growth, is generally sufficient. No doubt, most of you recognize an epithelioma of this type and will recommend prompt excision as the choice of election. But, I assure you, the treatment of elderly patients by surgical operation, even though hardly to be considered an operation, defers many an elderly patient from seeking medical advice for the beginning of a skin cancer. When these superficial epithelioma occur on the nose or around the eye, radium is the remedy *par excellence.* When occurring on other parts of the face

or body, a full dose of X-ray, properly administered, will produce beautiful results.

For the papillary type of skin cancer a surgical excision is the proper procedure, but, as in the foregoing type, oftentimes the patient refuses such measure. Unquestionably, the papillary type is more prone to malignancy than the other two. Neighboring lymphatic glands are more early involved. As in the other varieties, X-ray or radium give the best results.

The following questions are often asked: Which of the two measures, radium or X-ray, is preferable for the treatment of cutaneous growths? What is the difference, if any, in these two? When to use one and when the other? From the writer's point of view, both are indispensable. The effect of radium and X-ray on a cutaneous growth is identical; both destroy the growth of a neoplasm by disintegrating the cellular elements. I am of the opinion that X-ray has a more selective affinity for abnormal tissue elements. In other words, that an application of an X-ray treatment to a growth of a cancerous character destroys the cancer cells, and the neighboring healthy tissue is uninvolved by the treatment. Unquestionably, the use of radium, as applied by the use of a flat applicator, is more easily used around the face than X-ray. Especially is this true of cancerous growth forming around the eyes.

Now, in these days of enlightenment, one rarely sees extensive and destructive skin cancers, while, in the past, it was not at all uncommon to see skin cancers of the rodent ulcer type having existed for years, with extensive destruction of tissue and resulting mutilation. For years the medical profession has endeavored to educate the public in regard to the early relief of suspicious growths of the embryonic type. And, unquestionably, the general public is throwing off the superstitions attending the treatment of new growths, and does not hesitate to seek medical advice for these conditions, while, as hereinbefore mentioned, one formerly delayed and only sought relief when he suffered pain and mutilation from an extensive cancer.

The removal of an early growth is a prophylaxis against cancers. We all agree to this, but as to the method of selection the surgeon has the disadvantage in that the inherent fear of the patient of elderly type produces delay, which results in extension of the growth. Therefore, fear and ignorance ought to be eradicated, and this by education and early removal of a growth that is subject to irritation. From my point of view, dermatology offers an easy and prompt method.

CONSANGUINEOUS MARRIAGES.

F. J. Walter, M. D.,
San Diego, Calif.

Since very early times the question of kinship in marriage has been discussed, but one will find comparatively little written upon the subject within very recent years. In England objection to such marriages has not been so strong as in America. In the United States we find the feeling against cousin marriage quite strong, and in thirty states* marriage between first cousins is prohibited, and in four of these states, Ohio, Indiana, Nevada and Washington, the prohibition is extended to first cousins once removed. If there is reasoned objection and harm results from such marriages we should

*Note—Marriage between first cousins is forbidden in all the states except Alabama, California, Colorado, Connecticut, Delaware, District of Columbia, Georgia, Hawaii, Idaho, Kentucky, Maine, Massachusetts, New Mexico, New York, North Carolina, Rhode Island, South Carolina, Texas, Virginia and between step-relatives except in Alaska, Arizona, Arkansas, Delaware, Hawaii, Illinois, Indiana, Iowa, Louisiana, Maryland, Minnesota, Nebraska, Nevada, New Mexico, New York, Ohio, Oregon, Tennessee, Utah and Wisconsin.

have strict and uniform laws in all the states, and, if none can be found, why legislate at all?

The following harmful results are frequently selected by the opponents of consanguineous marriages: (1) Marked decrease in fertility. (2) A high infant mortality. (3) The occurrence of deaf-mutism, insanity, albinism, harelip and some deformities.

If these harmful results can be proven we most certainly should have legislation in all the states regulating kinship marriages. It would seem that in some of our states legislators have taken it for granted, or at least the safe thing to do, to regulate such marriages.

No article on marriages of kinship can be complete without reference to Mendel's law.† A close study of this law is most interesting. It may also be of interest to quote from an address by Dr. Crzellitzer, in the Medical Society of Berlin, December 29, 1914, on "The Biological Effects of the Marriage of Blood Relatives." He says: "After several generations there appeared diminution of strength, constitution, smaller, more slender, more sensitive, lacking in constitutional vigor, and fertility fails at last. Latent diseases in the parent may become awakened in consanguineous marriages more than the public at large. In a person of mixed heredity a disposition which we call recessive may remain latent for decades, but come to light on pairing with another organism of the same tendency. Thus the Mendelian law gives the key to some obscure problems of the ages."

In *Munchener Medizinische Wochenschrift,* April 8, ILX, No. 13, pp. 681-736, Kanngiesser's investigation as regards offspring in large numbers of marriages of blood relations compared with others:

Mental weakness.. 4 %	}	No relation.
Impaired vision ..0.5 %		
Deaf-mutism 0.01%		
Mental weakness..9.4 %	}	Consanguineous marriages.
Impaired vision ..3.1 %		
Deaf-mutism 1.9 %		

In the interests of this article I wrote the Medical Superintendents of about twenty of the most prominent state insane institutions in the United States the following letter:

My Dear Doctor—I am preparing a paper on the marriage of first cousins and consanguineous marriages in general. Have you an opinion, in general, resulting from your observation, of the mental defects resulting from such marriages? I would greatly value anything that you might have to contribute and proper credit will be given. Do you believe that all the states should legislate against such marriages?

The replies, in the order received, are as follows:

Sonomo State Home, Elridge, Calif., July 25, 1921. —My dear Doctor: In reply to your communication of the 19th instant relative to the marriage of first cousins and consanguineous marriages. My personal opinion and observation is that the offspring of first cousins are usually defective, and if they do marry they should not reproduce, for we have many cases in this institution of this type. Of course, there are cases on record where the offspring of cousins are of average mentality, but I am quite sure it is the exception and not the rule. We also have inmates who are offspring of brother and sister as well as children whose father is the grandfather of the child, and in one instance where the father is the great grandfather of the child. These cases are usually of very low mentality.

Trusting this will cover the information desired, I am, very truly yours, F. O. Butler, Medical Superintendent.

†Mendel's law, Mendelian law; the law that the offspring is not intermediate in type between its parents, but the type of one or other parent is predominant. If two well-defined varieties of the same species be cross-fertilized, the resulting hybrid offspring will show the distinguishing characteristics of one of the parents only, this inherited characteristic being termed *dominant.* The characteristic of the other parent, however, known as *recessive,* is latent and will appear in the next generation bred from the hybrid. The offspring from this second generation will be of two kinds, three-quarters of the offspring having the dominant characteristic and one-quarter of them the recessive characteristic. If two of these recessive numbers of the third generation are bred together, the subsequent generation will show constantly the recessive character. As regards the dominant members of the third generation, they divide themselves into two orders: one-third of these members produce purely dominant offspring; the other two-thirds are purely hybrids showing a mixed character and each subsequent generation from them shows the same proportion of pure dominants, pure recessives and hybrids. This law may be expressed by the following formula: $n(DD+2DR+RR)$ in which *DD* represents pure dominant offspring; *RR* pure recessive offspring, *DR* hybrid offspring and *n* the number of the generation.

Agnew State Hospital, Agnew, Calif., August 4, 1921.—My dear Doctor: In reply to yours of recent date, I cannot give you any statistical information from our records in regard to consanguinity as a factor in producing insanity. The data given us in the commitment of patients does not cover this point and our records do not show it. My own opinion and observation do not lead me to place great importance upon this factor, unless there is repeated intermarriage. I am sorry I cannot give you some data of real value. Very truly yours, Leonard Stocking, Medical Superintendent.

State of New York, Gowanda State Homeopathic Hospital, Collins, N. Y.—My dear Doctor: In reply to your letter regarding consanguineous marriages, I would say that, in general, our opinion is that these are unwise, especially if there is family heredity and the two parties are alike, since intermarriage would tend to increase and intensify pathological traits. I doubt if legislation would be efficacious. Of course, it is necessary to consider the make-up of the individual, the likeness or unlikeness of the cousins and other factors. We have only a few cases in the hospital whose parents were cousins and in those am unable to offer anything further, I am, very truly yours, C. A. Potter, Superintendent.

The State Hospital for the Insane, Danville, Pa., August 12, 1921.—Dear Dr. Walter: In reply to your communication of August 6th, will say as follows: Our professional opinion in the matter, while in accordance with the law of physical inheritance, is that the qualities of the parents, when alike, are intensified in the offspring and, therefore, the sound mental and physical constitution of two nearly related parents should be transmitted with certainty to the offspring, and if care is exercised in the mating as to the proper balance in the matter of temperament, the results may be in many instances without untoward effect. On the other hand, it should be remembered that parents as closely related as first cousins, although apparently free from physical and mental defect at the time of marriage, are more apt than those not related to become afflicted with like disease during life and transmit a greater tendency to the same to their children. And, furthermore, consanguinity on the part of the parents is likely to bring together the subjects of similar neurotic taints, which will unquestionably be reinforced in the offspring. It would, therefore, seem that while marriage between first cousins may at times be consummated with safety to the offspring, on the whole it is a procedure not devoid of danger and is better avoided. Pennsylvania, among many other states, recognizes the danger of such matings and regulates the practice by law. Respectfully yours, J. Allen Jackson, M. D., Superintendent.

Harrisburg State Hospital, Harrisburg, Pa., August 12, 1921.—Dear Doctor Walter: I am in receipt of your letter of August 6th and would say that we have no figures bearing on the question of consanguineous marriages. I believe the influence of such factors has been overestimated, and see no reason for the passage of additional laws regulating such marriages. Yours very truly, E. M. Green, Superintendent and Physician.

State of New York, Buffalo State Hospital, August 12, 1921.—Dear Doctor: Your letter of August 6th, in reference to the marriage of first cousins, has been received, and in answer the hospital regrets to say that it has no data on the question that can be communicated at the present time. Very truly yours, F. W. Parsons, M. D., Superintendent.

State of New York, Binghamton State Hospital, Binghamton, N. Y., August 12, 1921.—Dear Doctor: Your letter of the 6th inst. is received. In reply I would say that after a professional experience of nearly forty years, I am of the opinion that the marriage of normal persons who are first cousins will not result in mental defect in the offspring. Where such defect manifests itself in the offspring I believe other causes than consanguinity have operated to produce it. I am, very truly yours, Charles G. Wagner, Medical Superintendent.

State Institution, Polk, Pa., August 12, 1921.—Dear Dr. Walter: Answering your inquiry of August 6th. We have no data or statistics indicating that marriage of first cousins in itself is the cause of mental defect. Although we have cases of mental defect in which the parents were first cousins. In most of these cases there is a history of mental defect in one or the other or both branches of the family. Our opinion is that there is no particular danger of mental defect resulting from the marriage of first cousins unless there is evidence of mental defect in the family. I do not believe it a good practice and believe that all states should legislate against such practice. Yours truly, J. M. Murdoch, Superintendent.

State Hospital for the Insane, Norristown, Pa., August 15, 1921.—Dear Doctor: In reply to your questionnaire will state that we have had over twenty-three thousand patients admitted to this hospital. In looking over our histories, I find that questions have always been asked in every case concerning the marriage of the parents—in other words, every history gives the consanguineous close relationship as accurate as can be obtained from the relatives. We believe that marriages of first cousins or too closely related marriages produce mental deficiency (imbeciles, epileptics, feeble-mindedness, etc.). We have one family in which the father and mother are first cousins, and ten of the twelve children resulting from this marriage are in institutions. Two boys and two girls of this family are in this institution. This is an exaggerated family, but we have many families where the fathers and mothers are related. I also know of many private families, not connected with the institution at all, having defective children where the parents are related. I might add that this is a large institution and we have over three thousand patients, and they are constantly coming and going. Much more could be said on this subject, but I hope the above will assist you in preparing your paper. Very truly yours, S. M. Miller, Chief Resident Physician Department for Men.

Kankakee State Hospital, Kankakee, Ill., August 15, 1921.—My dear Doctor: I have your letter of recent date inquiring as to the advisability of the marriage of first cousins and other consangineous marriages. Such marriages are not to be encouraged, looking at them from every standpoint, especially so from the viewpoint of one interested in mental disorders. The chief reason for this is that, should there be an inherited deficiency present in one, the

same tendency is apt to be in the other; therefore, the progeny of such a union will face a double danger of faulty inheritance. I am certainly in favor of laws in every state preventing such marriages. Sincerely yours, Eugene Cohn, M. D., Managing Officer.

Homeopathic State Hospital, Allentown, Pa., September 12, 1921.—Dear Doctor: I regret to state I have no information in a general way from my observation on mental diseases, resulting from such marriages. In my Massachusetts service of seventeen years I can recall only one, or at the most two such cases. The same applies since my coming to this institution in 1912—not more than two. The question has always been in my mind whether the actual marriage of cousins has any material effect, provided both are healthy and have a good hereditary background. Where there is bad hereditary or mental defect in one and particularly both branches of the family, then there will be a large number of mental cases. Personally, I believe in the Darwinian theory: if there is defect in both parents, all the children will show this tendency; if one is normal and the other abnormal, one-half of the children will be normal and the other abnormal. I should be in hearty accord to have all states legislate against the marriage of cousins, but would also add that where there is marked heredity in the family, particularly feeble-mindedness, that this should be equally legislated against. Yours very truly, Henry L. Klopp, Superintendent.

State of New York, Kings Park State Hospital, Kings Park, L. I., N. Y.—Dear Doctor: Replying to your letter of the 6th inst., concerning the marriage of first cousins and consanguineous marriages in general, I would state that as regards the likelihood of mentally defective offspring, such marriages would be more apt to produce such offspring in those cases in which there is a strain of such defectiveness, but not otherwise. It is, however, equally true that in case of families in which there are superior strains instead of defective ones, a strengthening of the superiority might also be expected. I am, therefore, not in favor of legislation intended to further restrict consanguineous marriages, that is beyond the already existing restrictions in the more liberal states. Very sincerely yours, Wm. C. Garvin, M. D., Superintendent.

State of New York, Central Islip State Hospital, Central Islip, L. I., N. Y., August 17, 1921.—Dear Doctor: In reply to your letter of August 6th, my observation leads me to believe that in general consanguineous marriages indicate temperamental or intellectual defects in one or both contracting parties, and I do not believe the relationship *per se* results in mental defects or psychoses in the offspring. However, it stands to reason that the union of abnormal individuals will result in a large proportion of abnormal children. Inbreeding, as is well known, is used to improve the stock of animals, and to develop certain admirable traits; the inbreeding, on the contrary, will result in defective stock, and in general the same rules can be applied to man. I am not in sympathy with legislation along such lines. I do not think that it all touches at the root of defective inheritance, and there are certain racial customs which are too prevalent to be ignored, neither will laws change the customs. Very truly yours, G. A. Smith, M. D., Superintendent.

From these letters it is evident that the majority would advise against marriages of this sort, fearing the undesirable strains rather than hoping for the desirable ones. It is also evident that there is a great diversity of opinion regarding legislation. It would seem that state institutions not using the questionnaire regarding the parents are the ones feeling that there is no great and undesirable end regards feeble-mindedness, while in Dr. S. M. Miller's letter he tells us that in a very large institution the question was asked in all cases and that they believe that marriages of first cousins or too closely related marriages produce mental deficiency (imbeciles, epileptics, feeble-mindedness, etc.).

In a long paper by Ethel M. Elderton, Galton Research Scholar, London, on the "Marriage of First Cousins," published in 1911, I find much valuable detail and the opinion that there is much public opinion against first-cousin marriages in America and, hence, fewer such than in England or even in Ireland under church influence. In a summary of deaf-mutism the author concludes that "there seems little doubt that if there is any deaf-mutism in a stock, a cousin marriage, even when both parties are free from disease, is most dangerous to the offspring." "And in considering the question of healthy or unhealthy stock it is not sufficient that the parents, brothers and sisters of the individual should be sound, but the uncles, aunts, grandparents and cousins must also be taken into account in forming an estimate." Again speaking of haemophilia, this author quotes from the "Treasury of Human Inheritance" in which there is a pedigree of haemophilia, though latent for six generations, was found scattered in collaterals. The lesson is that cousins and collaterals of all grades are of immense importance in diagnosing the eugenic fitness of a given individual. In the case of albinos when a parent is albinotic, 32 per cent of the children are albinotic as against 14 per cent where the parents are not related. The latter from Mr. E. A. Fay's

book, "An Inquiry Into the Marriages of the Deaf in America." Several years ago Sir Arthur Mitchell examined 711 persons of unsound mind in nine counties in Scotland. In 192 cases the parentage was unknown. Of the remainder 98 were the children of consanguineous marriages and 412 of non-consanguineous, *i. e.*, in 18 per cent of them first-cousin marriages. This is a far larger percentage of cousin marriages than among the general population, and tends to show that consanguinity is an important factor in unsoundness of mind.

The question of cousin marriage becomes quite important when we consider two persons quite healthy themselves, but belonging to a stock tainted with some defect. When one or both cousins concerned is a sufferer from some defect, we take it for granted that no one would advise their marriage, but when both of the cousins are quite healthy the real problem of cousin marriages arises. The subject is full of complexities and we have always to deal with latent defects awaiting a chance to become patent. There seems no evidence to show that a diminution of fertility follows necessarily a consanguineous marriage. There seems not enough evidence to answer whether or not absolute sterility results from a marriage of kin except in repeated marriages of this sort. There seems to be some evidence that child mortality is greater in the marriage of kin. There is definite evidence that deaf-mutes, albinos and persons of unsound mind are the result of kin marriages in the opinion of many who have a chance to observe thousands of cases. If this holds for these defects, it may hold for a large range of pathological states. If the offspring are affected and one parent is an albino or a deaf-mute, a consanguineous marriage more than doubles the number of children affected by the abnormality. To quote the Galton Research Scholar: "The real danger in cousin marriages lies not in the existence of patent defects in the stock. Nor can we recommend cousin marriages because the stock has certain patent valuable characteristics. Behind the obviously advantageous quality may exist the rare but latent defect. The danger of cousin marriages lies in the probability that the germ-plasm of each individual contains numerous latent defects, each of which is rare in the community at large, and each of which is of small danger to the individual or the offspring unless the mating is with another individual whose germ-plasm contains one or more of the same latent character."

I ask, why should we not have uniform legislation against the marriages of near kin when, after an examination of the evidence at present obtainable, we find that the bulk of cousin marriages are undesirable? So many of them are undesirable even when the individuals can boast of an apparently healthy and normal ancestry and collateral kinship. The one exception we might make is in the case of the occurrence of some rare quality, which is peculiar to a stock, and which cannot easily be preserved for social profit except by marriage of kin. It is only in such a case that there seems the least justification.

4079 *Hillcrest Drive.*
San Diego, Calif.

THE WEIGHT OF CHILDREN.

WM. W. MACDONNELL, M. D.,
City Health Officer,
Jacksonville, Fla.

Last year the school children of Jacksonville were weighed and measured, and it was found that 59.64 per cent of the white children were underweight and 39.46 per cent of the negro children were underweight.

Thinking that it would be of interest to the physicians of Florida, I am appending the table used, which has the approval of

HEIGHT AND WEIGHT TABLE FOR GIRLS.

Height inches	Age 5 yrs.	Age 6 yrs.	Age 7 yrs.	Age 8 yrs.	Age 9 yrs.	Age 10 yrs.	Age 11 yrs.	Age 12 yrs.	Age 13 yrs.	Age 14 yrs.	Age 15 yrs.	Age 16 yrs.	Age 17 yrs.	Age 18 yrs.
39	34	35	36											
40	36	37	38											
41	38	39	40											
42	40	41	42	43										
43	42	42	43	44										
44	44	45	45	46										
45	46	47	47	48	49									
46	48	48	49	50	51									
47		49	50	51	52	53								
48		51	52	53	54	55	56							
49		53	54	55	56	57	58							
50			56	57	58	59	60	61						
51			59	60	61	62	63	64						
52			62	63	64	65	66	67						
53				66	67	68	68	69	70					
54				68	69	70	71	72	73					
55					72	73	74	75	76	77				
56					76	77	78	79	80	81				
57						81	82	83	84	85	86			
58						85	86	87	88	89	90	91		
59						89	90	91	93	94	95	96	98	
60							94	95	97	99	100	102	104	106
61							99	101	102	104	106	108	109	111
62							104	106	107	109	111	113	114	115
63							109	111	112	113	115	117	118	119
64								115	117	118	119	120	121	122
65								117	119	120	122	123	124	125
66								119	121	122	124	126	127	128
67									124	126	127	128	129	130
68									126	128	130	132	133	134
69									129	131	133	135	136	137
70										134	136	138	139	140
71										138	140	142	143	144
72											145	147	148	149

Prepared by Dr. Thomas D. Wood.

ABOUT WHAT A GIRL SHOULD GAIN EACH MONTH.

5 to 8 years old..... 6 ounces.
8 to 12 years old..... 8 ounces.
12 to 14 years old..... 12 ounces.
14 to 16 years old..... 16 ounces.
16 to 18 years old..... 8 ounces.

Try to do as much better than the average as you can.

Height and weight to be taken in house clothes, without shoes. Weigh on the same day each month. Age the nearest birthday.

HEIGHT AND WEIGHT TABLE FOR BOYS.

Height inches	Age 5 yrs.	Age 6 yrs.	Age 7 yrs.	Age 8 yrs.	Age 9 yrs.	Age 10 yrs.	Age 11 yrs.	Age 12 yrs.	Age 13 yrs.	Age 14 yrs.	Age 15 yrs.	Age 16 yrs.	Age 17 yrs.	Age 18 yrs.
39	35	36	37											
40	37	38	39											
41	39	40	41											
42	41	42	43	44										
43	43	44	45	46										
44	45	46	46	47										
45	47	47	48	48	49									
46	48	49	50	50	51									
47		51	52	52	53	54								
48		53	54	55	55	56	57							
49		55	56	57	58	58	59							
50			58	59	60	60	61	62						
51			60	61	62	63	64	65						
52			62	63	64	65	67	68						
53				66	67	68	69	70	71					
54				69	70	71	72	73	74					
55					73	74	75	76	77	78				
56					77	78	79	80	81	82				
57						81	82	83	84	85	86			
58						84	85	86	87	88	90	91		
59						87	88	89	90	92	94	96	97	
60						91	92	93	94	97	99	101	102	
61							95	97	99	102	104	106	108	110
62							100	102	104	106	109	111	113	116
63							105	107	109	111	114	115	117	119
64								113	115	117	118	119	120	122
65									120	122	123	124	125	126
66									125	126	127	128	129	130
67									130	131	132	133	134	135
68									134	135	136	137	138	139
69									138	139	140	141	142	143
70										142	144	145	146	147
71										147	149	150	151	152
72										152	154	155	156	157
73										157	159	160	161	162
74										162	164	165	166	167
75											169	170	171	172
76											174	175	176	177

Prepared by Dr. Thomas D. Wood.

ABOUT WHAT A BOY SHOULD GAIN EACH MONTH.

5 to 8 years old..... 6 ounces.
8 to 11 years old..... 8 ounces.
11 to 14 years old..... 12 ounces.
14 to 16 years old..... 8 ounces.
16 to 18 years old..... 4 ounces.

the Children's Bureau of the Interior Department.

Not all underweight children suffer from malnutrition, but it is well to bear in mind some of the more important causes of malnutrition as given by the Assistant Surgeon General of the United States Public Health Service. Ten per cent underweight is to be considered undernourishment. They are:

1. The child does not get sufficient food.

2. He does not get the right kind of food. The appetite is spoiled for simple foods needed for growth, such as milk, cereals and vegetables, by indulgence in candy, sweets, pastries and other indigestible food.

3. He eats irregularly, between meals, spoiling appetite and digestion.

4. He bolts his food, never taking time enough to chew his food properly, but works it down with water.

5. He drinks tea and coffee instead of milk and water.

6. He does not get enough sleep. At 10 or 11 years he does not go to bed until 10 o'clock or after, when he should have been in bed at 8 o'clock, and sleep with windows wide open.

7. The child may suffer with habitual constipation.

8. He gets too much emotional excitement, motion pictures, etc.

9. He plays too hard—too many hours, or in too active and intense manner.

10. He is overworked at school or out; sometimes he has too many lessons or classes outside of school hours.

11. Malnutrition may be aggravated by such things as decayed teeth, enlarged tonsils or adenoids, or the underweight may be the beginning of some serious disease.

12. In places where malaria is present, or hookworm infection prevalent, the condition may be the result of these infections.

In Jacksonville the school children are periodically examined at school, and defects of growth, nutrition and physical condition are brought to the parents' attention. This work has been in progress for ten years, and remedial defects have lessened by about 10 per cent.

The Child Health Organization and the National Tuberculosis Society are arranging a list of health chores to be done by the child so that the health habits taught become automatic. They are: Clean bodies and teeth, plenty of sleep with proper ventilation, a bowel movement every day, and the drinking of milk—a quart a day.

PROPAGANDA FOR REFORM.

Aquazone (Oxygen Water) Not Admitted to New and Nonofficial Remedies.—Aquazone is stated by the Aquazone Laboratories, Inc., Los Angeles, California, to be a supersaturated solution of oxygen in water, carrying approximately five and one-half times as much dissolved oxygen as ordinary water. In an advertising booklet, it is suggested that Aquazone is of value in the treatment of influenza, pneumonia, typhoid, Bright's disease and kindred disorders. It was also stated therein that in the treatment of fevers it lowers the temperature, and that the administration of three bottles of Aquazone (representing 0.033 gm. 1½ grains—of oxygen) is of value for "preventive and tonic purposes."

The evidence which the Aquazone Laboratories submitted did not show that the effects were other than those which might be obtained from the administration of ordinary potable water. The Council declared Aquazone inadmissible to New and Nonofficial Remedies, because the therapeutic claims made for it were unwarranted, and because its use is irrational for the reason that oxygen given by stomach in this way is of little or no value. (Abstracted from Reports, Council on Pharmacy and Chemistry, 1920, p. 50).

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PROBLEMS IN THE REHABILITATION OF THE VICTIMS OF WAR.*

E. MCIVOR LAW, M. D., D. D. S.,
Arcadia, Fla.

Medicine and surgery have triumphed; so will rehabilitation. The medical and surgical history of the great world war will some day unfold many of the marvels, aye, miracles that were wrought upon the sick and wounded, when it seemed that survive they could not.

Now we are in the midst of the greatest and most important problems of them all—problems requiring the best medical engineering skill, including all the therapies. The training and proper fitting of these victims of the war for useful positions becomes of utmost importance in the economy of the nation.

This can be done each and every day, and with the same degree of success as the skilled surgeon accomplishes his task.

As the days pass, newer and more perfect methods will be conceived, developed and put into active and successful practice.

Many of these poor unfortunates are forced by the surgical conditions to remain in practically one position for long periods of time, and right here is where a great work can be done.

The work in rehabilitation should and does begin from the moment the patient sufficiently recovers from his injury, operation, etc., "to take notice." I know from daily personal observation in one of the largest army general hospitals, that the work done there was nothing short of marvelous in its conception, scope and accomplishment.

The patient must by some manner or means be kept interested, thus keeping his thoughts away from his infirmities. To this end we must use every means at our command, even devise new ones if we find none at hand to fill the bill. Then when the period of forced confinement is over, we have a

*Read before The Florida Midland Medical Society, at St. Petersburg, October 12, 1921.

clear, clean, cheerful mind ready to enter with full zest into that line of vocational training that will in due season bring about his true rehabilitation.

Man re-made, ready to go out again into the world, "armed *cap-a-pie*" to fight his way to success in the ranks of the great industrial army, ranking even higher as a producer or wage-earner than he did before the war.

Vocational misfits should be carefully guarded against and, if found, corrected at once, for he soon loses ambition and energy, and becomes a laggard.

"There is a future for every man who has the virtue to repent and the energy to atone."

Born free and equal! Not so, except as to law and franchise. There are limitations, mental, moral and physical. These limitations, men of thought and analytic perception and vision cannot fail to recognize. Therefore it becomes a fundamental problem in this great and grand work of rehabilitation that we recognize these limitations.

Too often we see a round peg trying to fit itself into a square hole. Useless effort! And it should be corrected at once, so that in passing up life's broad highway we may see each peg set in its proper hole, be it round, oblong or square. What better means than this can be found to eliminate friction; to produce energy and industry, from which progress must be born?

Many of the fundamental problems have been solved, but there are myriad others that will come up as the wonderful work of rehabilitation goes steadily on. Each one, as it presents, will be thoroughly and carefully solved in such a manner as to stand the test and to meet all requirements.

Technical skill, coupled with "bulldog tenacity" and "horse sense," will eventually conquer.

In the solution of these problems, let our estimate of the unfortunate victims of the war be not based upon what he is now, what he has been, but what he can and will be, by giving him the best medical and surgical treatment, the most thorough and skillful training, the proper placement in the employment best suited to him, and a pleasant environment.

Diagnosis by elimination should be the method pursued, and by which we determine upon the calling best suited to our patients, just as we would do in obscure mental and bodily ailments.

A human being damaged by wounds or disease, or both, in the world war, whose personality demands due consideration: restoration to the normal should be accomplished as quickly and fully as is consistent, using every resource and facility at our command.

The bulk of clinical problems arise from disorders, not disease. Effects of bodily disease are truly baffling, but how simple in comparison with the vast and unknown ramifications of mental illness, disorders of personality, etc. Collateral phenomena are often so grave as to constitute more than one-half the problem. Here the patient must be studied from various viewpoints, and we must take into consideration many things not ordinarily receiving attention.

"If at first you don't succeed," begin all over again; and obstacles that seemed almost beyond the pale of human ingenuity will fade into nothingness, and victory is ours.

Co-operation is the *sine qua non* in achieving the best results, and human conservation is the highest and most important branch. There may be a conflict, so to speak, between ethics and economics; then we must exercise discretion and keen judgment, and in every instance try to do that which is best for the patient.

Critical diagnosis must be used to unearth contributory disorders and lesions.

Rehabilitations of the victims of the war is by no manner or means a one-man's job. New problems present at every turn, collateral derangements may loom up, and if not recognized and carefully looked after will result in other derangements which may evolve into structural degeneration.

To restore to full normal is to bring up to par, not only the original status but to develop those innate faculties that have never before been used. This must be done in full accord with biogenic design.

A human being out of repair is closely analogous to a musical instrument out of tune. The tightening here, and the loosening there of a string, the proper placing of a wedge or pin as required, until each note and chord in the gamut rings true.

Mental disorders, confusion, including both intellectual and emotional, perturbations, fears, disquietude, doubts, anxieties and moral shock should receive special attention. These will shed light upon two sets of facts: First, what a patient thinks of his own condition, and second, his capacity of adjustment to his environment. A confused or distorted mind must have help—skilled help—and be patiently taught to raise itself above these sordid thoughts; to become its own restorer and self-regulator.

First of all, this problem presents a skein of tangled emotions, distorted imaginings, etc. These must be straightened out, self-respect restored, the proper ambitions fortified by a sane, emotional appeal, coupled with therapeutic measures carefully selected and applied.

A great difference exists between the industrial cripple and the victim of the war. We are well aware that industrial accidents seldom, if ever, *happen*—they are caused. Therefore the industrial cripple is, in the majority of cases, the cause of his own misfortune. Consequently he exerts will power and develops more recuperative force. He will make a more desperate effort to recover from his injury, train and fit himself for some employment. The war victim feels himself a hero. Well, so he is. And his rehabilitation is a debt the government should pay to the full extent.

In considering these problems (and their name is legion), it is the human interest that makes the strongest appeal.

It is a recognized fact that mortal beings should have both mental and physical work, and this work is, in proportion, just as necessary to their lives as is light, water and food. If possible, one should have work that is a veritable pleasure rather than burdensome in the least degree.

Why should a man not have a "hobby" if he so desires? One or more, so much the better. They but broaden his views and create in him a wider interest.

There is no greater "balm in Gilead" for sick minds, bodies and souls than pleasurable occupation.

Psychoneuroses—here we have the most pitiable conditions of all. They require more technical skill to successfully deal with than a Colle's fracture—not so tangible, but every whit as serious. Every effort must be made to keep the patient optimistic as to the future, and look well to his comfort. It is true he must work out his own salvation, but should not be bluntly told so, but rather must he have skilled help and advice. Tact and patience will usually put him "over the top" and win the fight.

As medical advisers, we must keep a weather eye as to our own mistakes and to those of teacher and preacher. Here again we must bring to our aid every means at our command.

Thus we see it requires a skillful skipper to hold the wheel steady, keeping his eyes firmly fixed on the safe headland of good results.

The oral cavity—here we find one of the most vital factors in the bringing back to health these victims of the war. Too much stress cannot be laid upon a thorough and exhaustive examination of the mouth—made by those who have at their command all the latest and best methods and apparatus, determining thereby, beyond all reasonable doubt, the conditions existing, and instituting an effectual treatment to eradicate all trouble thus found.

It is really startling, even now, the great number of human ills directly traceable to

bad teeth and lack of prophylaxis in the oral cavity. And many more will be found as science progresses—all caused by this much neglected organ.

One essential requirement of those dealing with the problems of rehabilitation is a patient, long-suffering disposition, and this comes with a world of meaning. These are absolutely invaluable assets in a thousand and one different ways, and can be properly classed as real psychotherapeutic forces. Next in order is a keen, technically trained perception. Without this the physician is unable to tell whether the patient is being properly dealt with. On the matter of this perception hangs success or failure. Of course, this is not the only factor making for success or failure in this work, for their name is legion, but this one is absolutely essential. Just as the experienced obstetrician, sitting in an adjoining room, can note the progress of labor by the change in tone of the patient's voice, so the medical man should be able, by use of his eyes and ears, to determine whether or not the war victim is satisfied and is putting his whole heart and energy into the process of rehabilitation. If not, then he must look to it at once. See to change of work, more encouragement, exercise in the fresh air and amusement.

"All work (or worry) and no play makes Jack a dull boy; so, too, "A little nonsense, now and then, is relished by the wisest men."

The matter of recreation and amusement is an essential problem in this work of rehabilitation. The hours for work, recreation and sleep should be arranged as best suited to the cases in hand. There are times when some of the patients cannot attend the places of amusement set apart for their own use and enjoyment. Then bring these diversions in some form or other to them, and you will note marked improvement almost immediately.

Environment is a major problem in the uplift and rehabilitation scheme. Pleasantly situated, these victims, even though the work at first selected and engaged in be not just to their liking, will make a more decided effort to overcome their disability. Then, when the change is made, to work best suited to his particular case, his progress will simply be marvelous. Many will outstrip themselves, developing latent forces and talent they never dreamed of, and never would have known they possessed had they not been in the great going "over the top" for humanity's sake. So let us "go over the top" for their sakes.

For many years the slogan of "back to the farm" has been heard all over the land. One of the greatest problems in this rehabilitation work is to interest as many of the victims of the war as possible in farming, fruit growing, trucking, etc.

There is no more healthy, clean, scientific, progressive, independent nor profitable occupation than that of forcing nature to yield an abundant harvest. Here the patient lives in the open, breathes the fresh air under the blue sky, and feasts his eyes ever and anon upon the vast and wondrous beauties of nature. By his efforts he wrests from the soil her manifold mysteries, and in truth becomes, in the fullest sense of the word, a producer. Production is the keynote to success in the solution of some of the most intricate economic problems of the age.

A knotty problem presents: handled in the ordinary way will lead to failure. I do not advocate the unusual because it is out of the ordinary, for it will only spell disaster; but, if to my mind, it seems clear that by cutting loose from precedent and attacking the problem from a particularly new angle, even at the expense of criticism and ridicule, will bring good results, then go ahead, having the power of the unusual to back you, and do what others won't or don't, and turn failure into success.

We all admit the "lure of the city." We will find many who desire to train for various lines of work that, we realize, does not suit them. Why? The answer is simple: They are longing for the lights, the

bustle and whirr of the great metropolis, and wish once again to mingle with its surging crowds and indulge in its dissipations.

There are those who will do best in the cities, just as we find those best suited to work in the small towns and in the rural districts. So the placement problem looms up as a stupendous one, vigilance being the price of success.

Medical, training and placement men should and must work together in perfect harmony, united in effort and energy, for energy is the foundation stone of fortune, the cornerstone of family happiness, the sheet-anchor of patriotism, the chief attribute of good government and, last but not least, the golden key that unlocks the treasure house of success.

There are minor problems that will arise at every turn, and they must be ready to solve them in such a manner as will add to the patient's happiness. For of all the medicines distilled in the retorts of science, happiness is the most satisfying. It adds materially to the length, breadth and depth of life.

Let everyone concerned in this grand work now being carried on by our government so perform the duties assigned them, that the nation with one accord will bear witness, "Well done, thou good and faithful servant."

For these feats (and such they are) there is no distinguished service medal, no *croix de guerre,* but simply the knowledge of duty well done. Who could wish for more?

To those who enter this work and give their best—their very best—when life is finished and they are laid to rest, may the Recording Angel, dipping her golden pen in the glowing chalice of the sun, write upon the scroll of heaven, IMMORTAL!

REVIEWS FROM CURRENT LITERATURE

UNCINARIASIS.

Smillie, Wilson G., M. D.: "A Comparison of the Number of Hookworm Ova in the Stool With the Actual Number of Hookworms Harbored by the Individual." The American Journal of Tropical Medicine, Vol. 1. No. 6, p. 389, 1921.

This paper details the comparative results of microscopic examination of stools and the test treatment method in 135 cases. It emphasizes the fact that an individual may harbor a large number of adult worms and still a specimen taken from the stool may fail to contain ova, and that a single negative result cannot be relied upon as an indication of freedom from infection.

Among the conclusions we find:

1. When the cases were considered in groups there was a definite relationship between the number of ova in the stools and the number of hookworms harbored.

2. When the cases were considered individually, a trend toward such a relationship was noticeable, although the number of ova in the stools frequently gave no trustworthy index to the number of hookworms harbored.

SPIROCHETE PALLIDA.

Lacy, George R., M. D., and Haythorn, Samuel R., M. D.: "Viability of Spirochete Pallida in Excised Tissue and Autopsy Material." The American Journal of Syphilis, Vol. 5, No. 3, p. 401, 1921.

While many articles have been written on the subject of extra genital syphilitic infections, the subject, with its possibilities, is given added force by the investigations of the writers.

Their attention was called to the subject by finding numerous actively motile organisms in the blebs and organs of a stillborn congenitally syphilitic infant that had been kept in the refrigerator twenty-six hours; these organisms inoculated into a rabbit intratesticularly produced typical syphilitic lesions.

Investigations were made both as to motility and the production of lesions in rabbits and guinea-pigs.

Positive motility was observed:

In human autopsy material forty-eight hours after death, the body having been kept in the refrigerator during this period;

In chancre, seven days after excision;

In serum exudate from chancre in sealed capillary tubes at room temperature, 121 days after collection;

In saline suspension of rabbit's testicle in sealed capillary tubes at room temperature, fifty-eight days after castration;

In rabbit's testicle at refrigerator temperature, fifty-eight days after castration.

The motility was preserved equally well at room and refrigerator temperature.

In all but three of the inoculation experiments the material was injected intratesticularly, the other three being into the vaginal mucus membrane.

Positive results were obtained in ten rabbits inoculated intratesticularly with material from autopsy or chancres within twenty-six hours of death or excision, and one other was reported as positive with a question.

The balance of the inoculations gave negative results.

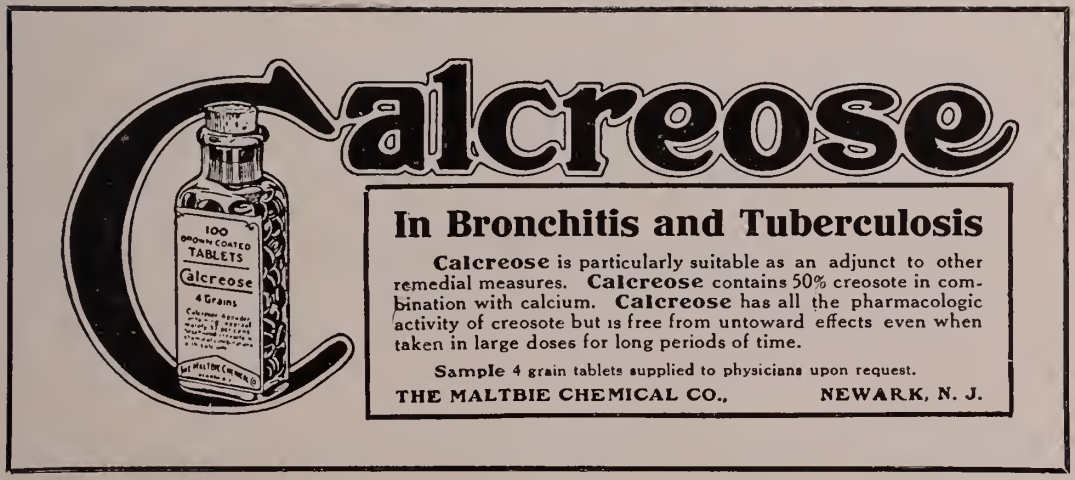
PUBLISHER'S NOTES

THE NEWER MEDICINAL CHEMICALS.

On Friday evening, January 6th, Dr. Alfred S. Burdick, president of The Abbott Laboratories, Chicago, delivered an address before the Chicago branch of the American Pharmaceutical Association on the "Newer Medicinal Chemicals." The rapid growth of American chemistry through co-operation of all research agencies in this country was emphasized by the speaker.

Concrete examples of American achievements in synthetic chemistry were recited, and a plea made for the support of the medical and pharmaceutical professions to preclude the possibility of our again becoming dependent upon foreign sources for chemical supplies. The history of arsphenamine, barbital, cinchophen, neocinchopen, chlorazene, procaine, the benzyl esters and other synthetic medicinal chemicals was outlined. Announcement was also made of a number of new chemical bodies recently developed, and others on which research work was now being done by The Rockefeller Foundation, various universities, the American Medical Association and The Abbott Laboratories.

In conclusion, Dr. Burdick urged both physicians and pharmacists to prescribe and dispense medicinal chemicals by the newer American names, rather than to perpetuate the pre-war dominance of foreign synthetics. This position was supported by the Council



on Pharmacy and Chemistry of the American Medical Association, in whose laboratories American medicinal products have been analyzed and found to be equal and, in some cases, superior to foreign-made products.

ADRENALIN AND P. D. & CO.

Up to 1900, the medical profession had to be content with extracts and other preparations of the suprarenal gland that contained, besides what was wanted, a good deal of inert and possibly irritating material.

One manufacturing house, at least, was engaged in making a discovery—the isolation of the active principle of the suprarenal gland, or, if it is not quite accurate to speak of it as "the active principle," the pressor or blood-pressure-raising principle of the gland. For it was known that such a principle was contained somewhere in the gland substance, from the observed effect of aqueous solutions of suprarenal extracts, and it was this principle in pure form that was wanted.

Physicians need not now be told that the manufacturing house alluded to (Parke, Davis & Co.) was successful in its quest, for Adrenalin, the pressor principle sought, has been in use by the profession since 1901.

A QUALITY SERUM.

The practical freedom from risk of anaphylaxis that attends the administration of diphtheria antitoxin and the possibility of giving an adequate number of antitoxic units in an injection of small bulk are due to the manufacturing refinements instituted by such commercial laboratories as that of Parke, Davis & Co.

The antidiphtheric serum put out by that firm is noted for high potency, the absence of non-essential proteins, and a minimum content of total solids.

REMEMBER THE ANNUAL

MEETING

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ORIGINAL ARTICLES

URETERAL STRICTURE.*

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In discussing this subject of Ureteral Stricture, the intention is to study those strictures due to an inflammatory process within the ureteral wall itself. Ureteral strictures due to intrinsic inflammatory changes within the ureteral wall are far more common than we are prone to believe. In fact, it is only within recent years that these conditions have been given thorough recognition and study. Hunner deserves the credit for having studied and reported a great many of these cases and has been instrumental in having presented a satisfactory treatment for this class of sufferers.

ETIOLOGY.

Not until recent years has the cause of this condition been worked out. For a long time every stricture of the ureter was thought to be due to a congenital malformation.

Kelly anticipated our more modern knowledge of the subject in 1902 by stating "strictures are caused by an inflammation in the ureteral walls produced by the more common pyogenic cocci, by the gonococcus, and by the tubercle bacillus, and the rarest in my experience in women is due to the gonococcus." On the contrary, Garceau, in 1903, after reviewing the literature and judging from his own experience, says: "The chief cause of fibrous stricture is gonorrheal infection." Furniss believed that most ureteral strictures were congenital in origin, but later concluded that infection played the important part in their etiology. He says: "The infiltration in the ureter is the result of an acute hematogenous infection of the kidney which often persists as a pyelitis, urethritis or secondary cystitis." Kelly and Burnham, in speaking of traumatic stricture, say: "Traumatic stricture of the vesical end of the ureter following the injuries of labor and surgical operations, especially the Wertheim operation for cancer of the cervix uteri, is quite common. As a rule, the trauma has so interfered with the blood supply of the ureter that there is lateral necrosis, causing a continuous leakage of the urine, and a resultant urethrovaginal fistula. The spontaneous healing of such a fistula almost invariably means stricture."

Gunshot wounds and stab wounds are rare etiological factors, but Morris reported five cases in 1901.

Trauma, such as would crush the pelvic bone or rupture the pelvis of the kidney or bladder, may leave an injury so sufficient that in later years it may cause a stricture.

As to sex, ureteral stricture is far more common in females, probably due to the easier avenue of infection through the external genitalia.

I admit the possible and probable factors mentioned above as causing some of the strictures, although I am firmly convinced that the majority of ureteral strictures, not including those of tuberculous origin, should be classed as a simple chronic inflammatory process which has its origin in an infection carried to a site in the ureter from distant foci such as diseased tonsils, sinuses, teeth, and so forth.

SYMPTOMS.

A patient suffering from a stricture of the ureter usually complains of a long standing pain, the cause of which could not be ascertained. The pain chart of this condition would be hard to make perfect, as their pain may be in the kidney region, inguinal region, over the appendix, in the epigastrium,

*Read before the forty-eighth annual meeting of The Florida Medical Association, at Pensacola, May 10-11, 1921.

around the umbilicus, in the bladder, in the urethra, or it may radiate to the sacrum or down the lower extremities. There is often frequent urination and not infrequently a history of hematuria. Very seldom does the patient call attention to any localized symptoms produced by the stricture. From the point of inflammation, pain may radiate in any direction; laterally into the hips or groin region, or posteriorly simulating a sacro-iliac joint or a sciatica, or downwards into the thigh and leg. There may be pains in the lumbar region due to overdistention of the kidney pelvis. Frequently there is a history of indefinite pains in the lower abdomen. Any of these pains may be induced by an auto ride, overexercise, going up steps, getting the feet wet, menstruation, or unusual exposure.

Temperature: Chills and fever are common in cases where there is infection. I have had cases of pyelitis where there was no chill and no appreciable fever, and the only symptoms were general malaise and mental depression. In such cases, should the stricture close and cut off free drainage, there is usually a chill and high temperature. It is important to know that a patient may run a high temperature without demonstrable infection of the kidney pelvis or bladder.

Gastrointestinal Tract: These symptoms may be from the central nervous system, reflex, or a result of absorption of toxins. These are the same as those symptoms produced by a stone in the ureter, or any other cause of obstruction to the flow of the urine through the ureter. The symptoms vary from slight nausea with loss of appetite to extreme nausea and vomiting lasting over a period of a couple of weeks. Often the patient will complain of gas distention with indigestion and eructation. Occasionally there is complaint of rectal tenesmus and a desire for stool. Pain just before or during stool in some cases is likely due to fecal matter passing over the tender peritoneum near the site of the ureteral stricture.

Mental Symptoms: These are similar to those found in any general toxic condition. Headaches are not infrequently complained of.

MORBID ANATOMY.

Hunner has reported the macroscopic appearance of about fifteen cases operated upon. The inflammatory area varies from a slight annular thickening in the ureteral wall to a condition of diffuse cartilaginous thickening which may occupy several centimeters of the ureter. Multiple annular strictures are not uncommon. The infiltration may be confined to the ureteral wall or there may be extensive periurethritis.

Microscopically, the stricture area shows a chronic inflammation. The epithelium is changed from the transitional stratified to a more squamous type. The epithelium may be denuded, resulting in an ulcer in the stricture area.

LOCATION OF STRICTURES.

In a great majority of cases the stricture is in the broad ligament region or within 5 or 6 cm. of the bladder. The next most frequent location is at the bifurcation of the internal iliac vessels, or about 8 to 10 cm. above the bladder. In both of these regions there are a great many lymphatic glands, and at operation these glands have been found enlarged. In a series of twenty-four cases I found seven strictures were bilateral, eighteen were unilateral, eleven were on the right side and seven were on the left.

RELATION OF STRICTURES TO OTHER PATHOLOGICAL CONDITIONS OF THE URINARY TRACT.

Changes of the Upper Urinary Tract Due to Stricture: The kidney pelvis may vary in capacity from normal to one holding 200 c. c. or more. Cases of hydronephrosis naturally greatly impair the function of the kidney.

Bearing of Ureteral Stricture on Stone Formation: As it is true that kidney and ureteral stones are the result of the deposits of salts, it makes the study of ureteral stricture more interesting. A stone may begin to form at the site of an inflammatory por-

tion of the ureter, or it may originate in the pelvis of the kidney and be passed down to the strictured portion of the ureter, where it may become lodged and receive a continual deposit of urinary salts.

The consensus of opinion is that there must be a nucleus for deposits, such as epithelial cells, bacteria, or blood cells, before a stone can be formed. If this be true, we must admit that the small particle must have a resting place before a stone can form, for this formation may take months or years to develop. Therefore, if the ureter is open and there is free drainage from the pelvis, such a small particle will have a clear passage into the bladder. Should there be an obstruction in the ureter resulting in a hydronephrosis, this dilated pelvis would afford an ideal location for stone formation. A small stone passing down the ureter may be lodged in any constriction of the ureteral lumen and there easily enlarge by means of more deposits.

Influence of Ureteral Stricture in Pyelitis: In dealing with any localized pyogenic infection it seems needless to state that the better the drainage the more quickly will good results be obtained. The same principle holds true in pyelitis with a stricture and resultant poor drainage. The stricture should be dilated first and then pelvic lavage instituted while the catheter is in place.

DIAGNOSIS.

The diagnosis of ureteral stricture depends upon the history, palpation of the abdomen, palpation of the ureters through the vagina or the rectum, cystoscopy, catheterization of the ureters by the wax bulb catheter and roentgenography.

Symptoms should be studied carefully. Remember that experience has taught us to suspect stricture in any patient complaining of obscure abdominal pain which, in some cases, is referred pain into the urethra or down the thighs.

Physical Examination: On deep palpation over the ureteral regions, not infrequently there will be definite tenderness. Following attacks of pain, soreness and tenderness in the ureteral areas are not uncommon. Often there is tenderness on pressure in the kidney region. In some cases a very tender kidney is due to the excess back pressure of urine in the pelvis due to the stricture. On vaginal palpation, where the stricture is in the broad ligament region, there may be definite tenderness at that point.

Urinalysis: Long-standing ureteral stricture cases will usually present negative findings. Even cultures from the bladder or kidney show no growth. However, occasionally, microscopic examination does show a few red cells and leucocytes.

Cystoscopy: Frequently careful examination is quite negative. In cases where a stricture is near the ureteral orifice, the latter may present an edematous puckering or redness, which is quite suggestive. Many cases of ureteral stricture will show a stricture of the urethra, evidencing an old urethritis.

Catheter Test: The wax bulb catheter is the positive test in the diagnosis. I use a No. 6 renal catheter, and make a corkscrew tip of wax, and also adhere a wax bulb of 4 m. m. diameter about 8 cm. from the tip of the catheter. The waxed tip of the catheter readily passes through a stricture, and on removal of the catheter, the wax should be carefully examined for scratch marks due to a stone in either the ureter or the kidney pelvis. The wax bulb referred to serves a double purpose. It will show scratch marks from a stone should one be present in the ureter. Its more important function is that on withdrawal of the catheter, the bulb will hang in the stricture area, and forced passage of the bulb through the stricture usually produces the patient's old pain.

It is important to know that a renal catheter of large size may be passed without detecting a stricture. If a hydronephrosis is found, suspect a ureteral stricture. A chill followed by temperature following ureteral catheterization of a pyelitis case is suggestive of a stricture.

In passing a bulb catheter, diagnosis of a ureteral stricture should not be based upon an obstruction felt in introducing the catheter, but upon the hang of the bulb as the catheter is withdrawn. Occasionally a grating sensation is detected as the bulb is withdrawn through the strictured area due to the presence of scar tissue.

Roentgenography: Seldom is the aid of a roetgen-ray examination necessary in determining the presence of a stricture. Occasionally, when there are symptoms leading one to suspect a stricture and yet no definite hang is experienced on withdrawal of the wax bulb catheter, roetgenography serves as a valuable aid, for a stricture pronounced enough to cause symptoms may be so lacking in scar tissue as to offer no obstruction to the passing of the bulb. In obtaining a roentgenogram, the wax bulb is passed into the ureter well beyond its orifice. A solution of sodium bromide or thorium is injected through the catheter, filling the ureter and kidney pelvis. Either of these solutions throws a shadow on the plate and clearly outlines the walls of the ureter and kidney pelvis, disclosing very readily a hydronephrosis or dilated ureter, if either is present. The plate is made while the catheter is in situ.

DIFFERENTIAL DIAGNOSIS.

Tuberculosis of the ureter would be likely to cause a stricture of its lumen. A tuberculous kidney would cause haematuria. It is advisable to use the guinea-pig test in all cases of ureteral stricture to rule out a Koch infection.

Syphilis should be excluded by the routine Wassermann test.

Other conditions to be borne in mind are cystitis, pyelitis, pyonephrosis, floating kidney, hydronephrosis, chronic nephritis, inflammatory disease of the pelvic organs, various functional disorders of the stomach and intestines, intestinal adhesions, colitis, gall-stones, appendicitis, lumbo-sacral or ilio-sacral joint pains, and sciatica.

TREATMENT.

The immediate object desired is dilatation of the stricture with relief of symptoms. To prevent recurrence, any infection of the urinary tract, or focus of infection elsewhere, must be removed.

If a thorough dilatation of the ureteral stricture is accomplished, I believe a permanent cure may be expected. The ideal treatment for stricture of the ureter is by dilatation from the vesical approach. When the stricture is in the ureteral orifice, there may be difficulty in introducing the catheter. In several cases I have had to use filiforms and a metal searcher to open the ureteral orifice before the catheter would engage. Occasionally when the olive-tip catheter failed, I have successfully used the whistle-tip.

If the patient has bilateral strictures, each should be treated on a separate day. I have found it best to give treatments about every ten days, as in that time the traumatic edema has had time to subside.

Dilatation of the stricture is accomplished by use of the wax bulb catheter described above. It is advisable to make the bulb of wax 3 2-3 m. m. in diameter for the first treatment. The catheter is passed into the ureter through the cystoscope, the bulb gently forced beyond the stricture and then withdrawn. The diameter is gradually increased for each treatment until a bulb of 5 1-3 m. m. in diameter is used. This can usually be accomplished by the third to fifth treatment, depending upon the density of the stricture.

PYURIA.*

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Pyuria, defined as pus in the urine, is often misleading. Pyuria is pus, of known urological origin found in urine. Pus found

*Read before the forty-eighth annual meeting of The Florida Medical Association, at Pensacola, May 10-11, 1921.

in urine is classified by the laboratory worker, according to the number of pus cells, into few, moderate, and many. These loosely applied terms are indications of the amount of pus in a particular specimen, and should not be accepted as evidence of the degree of existing pathology.

Pus in the urine may occur in any pathological condition of the urinary tract, and is the predominating evidence of urethral and renal infections. Urethral infections, including prostatitis and seminal vesiculitis, are nearly always the result of gonococci, and is the most generally known of the causes of pyuria. Bladder infections, or the overworked "cystitis," is not a disease *per se*, but is usually a symptom of a number of pathological conditions.

Renal infections represent the least known causes of pyuria and, consequently, the most poorly treated. For a better and more comprehensive view of renal infections it is necessary to explain the principles governing these. Of the various bacteria found, the bacillus coli and pyogenic cocci predominate.

The routes of invasion of the kidneys are by the blood stream, the lymphatics, direct extension of adjacent inflammation into the kidneys, and by trauma. Of all these causes, infection by the blood stream is the most common. Modern methods of blood culture have shown the not uncommon occurrence of living bacteria in the circulating blood. However, it has been conclusively demonstrated that all bacteria can pass through the kidneys without permanent injury to this organ. So, in order that renal infection can occur, it is necessary that some condition, either mechanical or toxic, has reduced the resistance of one or both kidneys. This condition is known as an accessory cause and may be either urinary retention, trauma, or toxic influences. Renal infections are classified as:

1. Acute suppuration of the kidney,
 (a) Pyemic kidney,
 (b) Focal suppurative nephritis,
2. Acute pyelonephritis,
3. Chronic pyelonephritis,
4. Pyonephrosis,
5. Infected hydro-nephrosis,
6. Perinephritis.

The pyemic kidney is the result of a general pyemia, bilateral, and is of interest only as a post-mortem study. The renal infections, with this one exception, represent cases, as a rule, amenable to treatment. However, the result of treatment depends entirely upon the correctness of a diagnosis, and a correct diagnosis is impossible without scientific use of modern means of study.

Pyuria—frequent and painful urination—when found in a case has been the general alarm of the medical fire department, and water by the gallon has been poured into the bladder. The multicolored additions to our host of bladder washes are no doubt pleasing to the artistic eye of the medical man who delights in the effect of color, but his method is *passe*, and the earlier we realize this truth the better it will be for our patients.

Fifty cases have been selected from the section of urology of the Bayside Hospital for study. All of these cases presented pyuria as a predominating symptom. Every case so listed had not been diagnosed on entrance to the hospital, but came seeking relief for pus in the urine. No cases have been included of acute urethral infections, or where pyuria was not discovered before entrance into the hospital. Anatomical divisions have been made and diagnosis listed under respective heads:

KIDNEY:	
Pyelonephritis (colon group)	5
Pyelonephritis (typhoid carrier)	1
Calculus	3
T. B.	1—10
URETER:	
Stricture	9
Calculus	5—14
BLADDER:	
Carcinoma	3
Diverticulum	3
Calculus	3— 9
PROSTATE:	
Contracted (median var.)	1
Adenoma	+
Carcinoma	1
Infectious (prostatitis and vesiculitis)	+—10

URETHRA:		
Stricture	5— 5	
GENERAL:		
Caisson Disease	1	
Cerebrospinal syphilis	1— 2	
		50

The ages were from 19 to 81; females, 18; males, 32. The females distributed as follows: Pyelonephritis (colon group), 4; typhoid carrier, 1; kidney calculus, 2; ureteral stricture, 7; ureteral stone, 2; urethral stricture, 2.

Under the anatomical division of kidney the cases classified as pyelonephritis (colon group) represent the series which we were unable to definitely determine accessory causes.

The case of renal T. B. presented some very interesting features. A man 68 years of age, born in Germany, but a citizen of America since 9 years of age. Contracted pulmonary tuberculosis when 28 years of age. At that time had bladder irritation for six months. On moving to Nevada and living an outdoor life, his pulmonary and bladder symptoms disappeared. Has lived in Florida for nine years. Six months before entrance into the Bayside Hospital he was confined to his bed with a severe attack of influenza. Near the end of his influenza attack, noticed frequent and painful urination. The first attack subsided within three or four days; since then has had, periodically, similar attacks. Pus has been in the urine constantly since first attack. He sought relief for pus in the urine.

At the time of entrance into the hospital he was urinating four to six times daily and from one to two times at night. A sterile specimen of urine was obtained from the bladder and T. B. found. Cystoscopic examination demonstrated a marked inflammatory zone around left ureteric orifice. The left ureter was blocked one inch above the orifice. Specimen from the left ureter showed only pus. Guinea-pigs inoculated from both kidneys demonstrated T. B. from left. A diagnosis of closed left renal T. B. was made.

Conclusions.

First. That pyuria is a symptom.

Second. That the indiscriminate use of urinary antiseptics and bladder lavage is the height of folly.

Third. The necessity of a more complete scientific study of cases presenting pyuria as a symptom.

NEURO-SYPHILIS — SOME PRESENT-DAY OPINIONS CONCERNING.

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Washington, D. C.

In a paper on "Neuro-Syphilis," we must constantly bear in mind that we are dealing with special phases of a general infection. Not only this, but we are dealing with an advanced stage of a serious disease, and in some of its varieties, as paresis and tabes, stages which until quite recently were not considered amenable to treatment.

When the psychiatrist or neurologist has before him a number of people showing the diagnostic features of any form of neuro-syphilis, he asks himself two questions: 1st. How many of these might have been cured or arrested before this stage was reached? 2nd. How much may still be done for them?

No one can, at the present time, give a satisfactory answer to either of these questions, but scientific research is working daily to answer both, and we should all have open minds for the consideration of its discoveries and solution of problems, at the same time requiring the acid test before becoming too enthusiastic over new remedies and methods of treatment.

Of that phase of syphilis, broadly termed neuro-syphilis, there are two types: 1st. That type which affects the arteries and meninges primarily, and the nerve cells and fibers secondarily. This is called meningo-vascular or exudative syphilis. 2nd. That type which causes degeneration of nerve cells and fibers by direct attack. This is parenchymatous or degenerative syphilis.

Meningovascular Syphilis. — This type comprises the conditions known as cerebral syphilis, spinal syphilis, cerebrospinal syphilis, syphilis of the peripheral nerves, etc., and, of course, the symptoms are determined largely by the areas involved. The cranial nerves are frequently affected, but the spinal nerves are not often involved. The arteries and meninges are affected by a round cell exudate which causes either some form of gumma or obliteration of the lumen of the blood vessels. In case of the gumma we, of course, have pressure symptoms of all kinds, while obliteration of the lumen of blood vessels gives a deficient blood supply and thus causes so-called brain softening.

Parenchymatous Syphilis.—This is what has been called parasyphilis, as it was thought to be produced in some obscure way, but as more is being learned of the cause and nature of this disease, such terms as para and metasyphilis are falling into disuse. The principal manifestations of this type are paresis and tabes dorsalis. Both, as stated above, were until quite recently considered incurable.

The time elapsing between the initial infection and the development of well-defined neurosyphilis varies by many years and are first indicated by quite different symptoms, as can be readily seen from a very brief sketch of a few well-marked cases.

Case No. 1.—A white man, in the navy, had chancre at age of twenty-two; was given considerable treatment. At age of twenty-nine began having headache, vertigo, loss of memory, speech defects and other diagnostic signs of paresis.

Case No. 2.—A white man, soldier, had chancre at age of twenty-one; suddenly lost his efficiency at thirty-six; in a few days he became hyperactive; was going to do this, had to do the other. Much depended on his immediate activities. Next day developed a severe headache, was confused and disturbed. Reflexes and speech defects appeared in a very short time, plainly indicating paresis, which diagnosis was borne out by typical serological findings.

Case No. 3.—A white man; occupation, naval stores operator; single; had chancre at age of seventeen; cured chancre with "calomel powders." At thirty-four enlisted in the army for service in world war. Carried on well for more than one year; was in several battles and was on the front when armistice was declared. Went into Germany with army of occupation, and about three weeks after firing ceased, suddenly became disturbed and asked to be sent back to the United States. Said German women placed crying babies at his room door so he could not sleep. When babies tired of crying, the German men would place barking and howling dogs at his door for the same purpose. Soon developed headache, speech defects, psycho-motor retardation, and showed typical paretic serology. Was still in the same stupid state when last seen by the writer, about two years after the first symptoms, but had never had another attack of excitement.

Case No. 4.—A white man, doing clerical work. Had chancre at twenty-two. Received treatment for more than two years, according to methods of that day. At forty-six began to lose his efficiency, had memory defects, ideas of grandeur, irregular gait and serological findings were all positive.

Cases similar to the above might be quoted indefinitely, but those are sufficient for the purposes stated.

It will be noted that the time intervening between infection and the appearance of noticeable symptoms of neuro-syphilis was 7, 15, 18 and 24 years, respectively. However, we have cases on record varying in time from less than one year to more than forty years, but undoubtedly the vast majority of cases occur within the limits of from five to twenty years from time of infection.

Since there are so many years between the time of infection and the time when symptoms of neuro-syphilis appear, a great deal

has been written as to what takes place during these years. When does the infection reach the nervous system? Why does it lie inactive so long? Why do some syphilitics develop neuro-syphilis and others do not? And, again, why do some develop the meningovascular type, while others have the parenchymatous type?

Various views have been expressed by different investigators as to all these questions, but as to the time of infection, the most plausible view is that the nervous system is infected at the same time as the rest of the system, that is, along with the appearance of the symptoms of the primary and secondary stages. Such investigations as have been possible are quite suggestive that the spinal fluid becomes positive in some, many years before the appearance of either nervous or mental symptoms.

In order for any pathogenic organism to cause disease, two factors are necessary, namely, an active strain of the organism and a suitable medium upon which this organism may prey. It is a well-known fact that certain organisms may be present in a certain body tissue for many years before it begins to produce symptoms. This is notably true of the tubercle bacillus.

Then it is not unreasonable to believe that in all such cases, including the treponema, either factor above mentioned, or both combined, may be operative. That is, an infecting organism may lie quiescent in a tissue for years solely because the organism is of a weak or benign strain, or the organism may be quite virulent, but lodge in an especially resistive tissue, or an organism of attenuated virulence may lodge in an especially favorable medium and make rather rapid headway, or, again, an organism of decided virulence may reach a tissue especially favorable for its growth. Here one would expect a rapid development and course of disease.

All of these factors may operate in the case of neuro-syphilis and, in addition, there are those who favor the idea that there are certain strains of treponema having a special affinity for nerve tissue. This strain is termed neurotropic. Of all these things we have much to learn, but we already know that nature's laws are exact laws, and when a thing occurs in nature's realm it does not occur as a happen-so, but it is a definite cause followed by a definite effect. Hence, we may expect some valuable discoveries along this line in the not distant future. And in the same connection we are to seek for the real reason why some syphilitics develop neuro-syphilis while others do not, and why some develop one type while others have another type.

When the fields of diagnosis, prognosis and treatment are approached, we again realize that we could use to advantage more information.

A diagnosis of neuro-syphilis should neither be confirmed nor denied on too uncertain findings. Of course, any disease presenting the typical symptoms of a well-worked-out type is easy to diagnose. But neuro-syphilis, like all other diseases, often fails to so announce its presence, while early diagnosis and treatment are exceedingly important for both patient and physician.

As already stated, the spinal fluid has been found positive some years before noticeable nervous or mental symptoms are present. In this connection, Fordyce says: "No case of syphilis should be discharged without the knowledge gained by examination of the spinal fluid." While this is not a bad practice to follow with syphilitic patients who show few or none of the physical signs of neuro-syphilis, and while a diagnosis of some cases of neuro-syphilis may be made from spinal fluid laboratory findings alone, the greatest danger in present-day practice lies in taking a normal spinal fluid to mean that neuro-syphilis is not present. As valuable as the laboratory findings in spinal fluid are, we are to be careful to very cautiously follow out any physical signs present, regardless of normal spinal fluid findings. There are not only cases of neuro-syphilis with normal spinal fluid reactions,

but a few undoubted cases are met with which show both blood and spinal fluid negative. The majority of cases showing a normal fluid are of the meningovascular type of neuro-syphilis, which, by the way, is the type in which present-day methods of treatment hold out the greatest promise. There are, however, cases of parenchymatous syphilis which show a normal spinal fluid.

Those are the cases that give the most trouble, for syphilis is not the only foe lurking beside the pathway of the nervous system, hence the finest points are involved in the differentiation.

This differentiation is not to be gone into here, but too much stress cannot be laid upon the importance of a painstaking neurological examination in every case where the slightest suspicion of a syphilitic pathology is present.

Accepting as true the theory that the nervous system, if infected at all, is infected along with the general systemic infection, the question of the proper treatment of early syphilis takes on a broader aspect. Formerly all have been quite prone to accept of a symptomatic cure and allow the patient to go along under a mantle of false security and later develop neuro-syphilis in its advanced stage, a stage where treatment promises less. So sure is Fordyce that the proper treatment of early syphilis lessens the danger of late neuro-syphilis that he says: "In numerous publications I have presented certain arguments based on observations and study of the general pathology of the disease which have convinced me that practically all types of neuro-syphilis originate within the first year of the infection, and are then amenable to properly applied theropensic."

Then remains the question, what is to be done for the patient who has already developed any type of neuro-syphilis? Not long ago the idea was that when a diagnosis of paresis or tabes was made, nothing more could be done, and that idea is, I think, entirely too prevalent still. Of course, where important nerve structures have been destroyed, they cannot be replaced, but evidence is accumulating daily to show that proper treatment, properly applied, will give great benefit in many cases heretofore considered hopeless. In this connection, no less authority than Solomon says: "The majority of cases of syphilis of the nervous system, whether so-called cerebrospinal syphilis, tabes dorsalis, general paralysis or other forms, are entitled to treatment, and if this is done thoroughly, intensively and systematically, the results will be gratifying. The form of treatment, mercury, iodide, arsenic, intraspinous and intracranial injections and the amounts, will necessarily depend upon the condition in each individual case."

TWO ANOMALIES OF PREGNANCY.*

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Quincy, Fla.

Case No. 1.—*Abdominal Pregnancy.*—Negro woman; age 36. Mother of six children. Consulted a physician because of rapid enlargement of abdomen of less than five months' duration. Cessation of menstrual period for five months previous to operation. Patient referred to me for operation, with a diagnosis of ovarian cyst of right ovary. There had been no pain at any time. No loss of weight. No inconvenience. Nothing to attract the patient's attention to her condition other than rapid increase in right side of abdomen.

Operation.—Abdomen was opened with a median line incision. After opening the peritoneum, I noticed a similar looking membrane adhering to peritoneum on right side, containing fluid, which later proved to be amniotic fluid, and a well-developed male fetus, indicating about a five and one-half months' pregnancy. The amniotic membrane was attached to the peritoneum in

*Read before the forty-eighth annual meeting of the Florida Medical Association, at Pensacola, May 10, 11, 1921.

front; no other attachment discernible. Just posterior to this membrane was the placentae, as large as to be found at end of full-term pregnancy. The placentae was adhered and continuous with the omentum, enough so that it was impossible to tell where the one began and the other ended, and from the omentum came most of its bloody supply. The placentae was also adhered to the lateral wall of the abdomen, ascending colon, caecum and vermiform appendix, all of which contributed some blood supply. The appendix was not only adhered to, but buried in the placental mass. The right tube was a typical pus tube. No evidence of a rupture or that it had ever contained the ovum during its developmental stage. The right ovary was cystic, but in no way attached to the placentae or membrane containing the fetus. The uterus was not enlarged. There were no changes in the left tube and ovary.

Berkeley and Bonnie[1] classify abnormal situations in pregnancy as follows:

1. The cervix (this is questionable); 2, the lower uterine segment (placentae praevia); 3, the junction of the upper and lower uterine segments; 4, the upper segments; 5, the fundus; 6, the cornua; 7, the interstitial portion of the tube; 8, the isthmic portion of the tube; 9, the ampullary portion of the tube; 10, the fimbriated extremity; 11, the Graafian follicle, and 12, the peritoneum. This last is not proven.

Williams,[2] in his classification, states: "As the fertilized ovum may be arrested at any point on its way from the Graafian follicle to the uterine cavity, it may undergo development in the ovary or in any portion of the tube, giving rise to ovarian or tubal pregnancy, respectively. It is doubtful whether the ovum can become implanted upon the peritoneum and a primary abdominal pregnancy follow."

I am fully cognizant of the fact that at present most authors admit the theoretical possibility of abdominal pregnancy, but are extremely skeptical as to its actual occurrence.

If the case just reported was not one of abdominal pregnancy primarily, then what was it? Whether pregnancy first took place in a small accessory tubal ostium that later on became obliterated, and leaving no evidence, I am unable to say.

Case No. 2 I am masquerading under the title that really belongs to Case No. 1, but inasmuch as it is the end result of pregnancy, I shall report it.

Case No. 2.—*Anomaly of the Fetus.*—Mrs. J. R. B.; age 22. Neurotic; primiparae; entered hospital for confinement. Family history, negative. Past history, negative. Labor was normal and child was delivered without forceps. The head and extremities of fetus were well formed. There was an entire absence of sternum and anterior abdominal wall. The heart was anterior to the anterior chest wall and was absolutely bare. No pericardium or any other covering over heart muscle. The lungs were normal and enclosed in the thoracic cavity. The ribs on the left side going behind the heart and attached to the muscles in front of the spinal column, being continuous with the attachment of the ribs on the right side. The liver, stomach, large and small intestines, omentum, pancreas, spleen and urinary bladder were all bare. The abdominal parietes only incased the kidneys.

I merely report these two cases because of their rare occurrence and failure on my part to find identical abnormalities reported in literature that I have reviewed.

[1] Berkeley & Bonney, Textbook, p. 530.
[2] Williams, 4th Edition, Text Obstetrics, p. 677.

INDIGESTION IN THE YOUNG INFANT.*

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Pensacola, Fla.

Indigestion in the young infant is a condition due usually to improper feeding, overfeeding or too frequent feeding, and not, as is often the case with the adult, due to an

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organic disease or a deficiency of one or more of the digestive juices, and therefore cannot be relieved by drugs.

This condition is naturally divided into two classes: First, that occurring in infants fed on the breast, and second, that occurring in infants fed from the bottle. But it is beyond the scope of this short paper to deal with but little of the phases of the second class, as that would necessarily include artificial feeding and its various perplexities and uncertainties.

By far the most frequent cause of abdominal pain in the first few months of life is due to indigestion and fermentation. Many of us, I am sure, have seen convulsions in older children that we could account for in no other way than from irritation caused by undigested particles of food in the intestinal tract.

Indigestion in the young infant is quite common indeed, so common is it that the old granny has called it the three months' colic. And it has often been passed up in the hope that it would disappear in three, or four, or five months.

I know of nothing that disturbs the young mother quite so much as the prolonged screaming of her baby, or nothing that seems to give the infant more pain than what is ordinarily termed colic.

The symptoms appear pretty soon after feeding. At first the patient begins to twist and squirm, and plainly shows it is uncomfortable. It throws the head back and draws the limbs up in an effort to give the distended abdomen more space. This in time is followed by crying and screaming which no amount of soothing will relieve.

If this condition is allowed to continue the stools will become loose and there will develop a tenesmus and straining, a combination that must tend to upset the nervous stability of these little ones, which undoubtedly influences the nervous system of later infancy and childhood.

In this connection I wish to report a case which came to me about three months ago. This patient, L. B., at the age of two months was brought from a nearby town, with the history of having five or six loose stools daily, accompanied by straining and tenesmus, and that the baby was able to sleep but very little because of the pain, screaming and general discomfort. The mother thought something was wrong with baby's neck, as it would throw its head back during the attacks.

On examination, the abdomen was found to be markedly distended with gas, and patient was fretful and plainly showed it was uncomfortable. It had been given Bulgaria tablets and the various caminative mixtures. Its feeding intervals had been changed from two to three and three to four hours, all of which failed to give more than temporary relief. I examined the breast milk and found it normal, so advised this mother to weigh this baby before and after nursing for twenty-four hours. Six a. m., it received three and one-half ounces; 10 a. m., four ounces; 2 p. m., three ounces; 6 p. m., two and one-half ounces. After nursing twenty minutes, plainly showing that it was being overfed, I advised nursing ten minutes and making nurse slowly, *e. g.*, nursing one minute and crying one minute. The results were most miraculous. In two days the stools were less frequent and patient did not throw his head back, and seemed perfectly comfortable.

I think it is quite well agreed among men who have had experience in using long intervals in feeding young infants, that it has a decided advantage over the old method of two and two and a half hours. But it will not solve all cases as with the one just reported.

Case No. 2.—Claude A., I saw when two weeks old with the complaint: Breast does not agree, reguritates food and has from six to twenty loose, green stools daily. The nursing intervals on this patient were from fifteen minutes to two hours. Weighing the baby before and after nursing revealed the fact that it was getting from three to four

ounces at a feed. It had gained a pound since birth, *c. g.*, in two weeks, yet the mother thought the breast was not agreeing with the baby. This infant was placed on three-hour intervals and made to nurse slowly, which entirely cleared up his condition in four days.

Case No. 3.—C. H., I saw April 7, 1921; age, five weeks. (He has a common story.) He was nursed until ten days old, during which time the mother reported he spit food, was constipated, fussy, fretful and cried a great deal. The mother was advised by her physician to wean the baby and give it a formula of malted milk, which it received until I saw it. Up to this time it had lost two pounds, or 25 per cent of its weight, and was having four or five loose stools daily, which latter was the complaint for which the baby was brought. I found the mother still had a slight secretion of milk, so advised putting the infant back on the breast and supplementing with a formula of modified cow's milk after each nursing. The first week the baby gained eight ounces, and it has since continued to gain and do well.

I do not believe that indigestion in the young infant is ever a cause for weaning. If we feel that the baby must have more food or other food, prescribe it, but do not take it from the breast, for there is no formula which can do more than approach the ideal.

So the relief of this condition lies in the recognition of its cause. In fact, I may say most cases will be relieved by changing the nursing intervals. In other cases the mother is not taking sufficient out-of-door exercise, or the milk may be too rich in fat or the reverse, or the baby's feet are allowed to remain cold. But patience on the part of the mother and patience on the part of the doctor will usually solve the problem. In the second class, or bottled-fed infants, the cause usually lies in the feeding formula, which must necessarily be fitted to the needs and digestive capacity of the patient. The problems here presented are usually quite different because the baby is fed a foreign or artificial food. In many instances, the physician will tell the inexperienced mother to feed the infant a little malted milk or put the baby on condensed milk or cow's milk, etc. If he would take a little more time and be more specific in his directions, the baby and mother would be guarded against much trouble and discomfort. If the infant is started on a formula that is too strong, or is given more than it can take care of, its digestion will be upset. Some mothers have no conception of the amount the young infant should take at a feed. I have seen an infant a few weeks old offered eight ounces. These are usually the infants that give so much trouble and come with a history: "We have tried everything and nothing agrees with the baby." These add largely to our class of difficult feeding cases, and also to the death rate in bottle-fed infants. Thus it surely behooves us to be more careful and explicit in prescribing the first formula for the young infant or in removing it from the breast, for on this, to a great extent, the future health of the child will depend.

PROPAGANDA FOR REFORM.

Another Remonstrance Against Mercury Inhalation.—During the last few years the attention of the medical profession has been directed by clever propagandists to the treatment of syphilis by procedures which involve the volatilization of mercury-containing mixtures by heat and the inhalation of the resulting volatile products. There is nothing novel in the principles concerned. Inhalations as well as fumigations of mercury have been tested at various times and the procedures have been abandoned because of the uncertain dosage. The Council on Pharmacy and Chemistry has refused to endorse preparations proposed for the treatment of syphilis which depended essentially on the administration of mercury by inhalation (Spirocide not admitted to N. N. R.). In this decision, it is sustained by a reinvestigation of the inhalation treatment of syphilis carried out by Cole, Gericke and

Sollmann. The investigators point out that the assumption that mercury is more promptly absorbed by the lungs was based on physical misconceptions. In fact, the mercury is condensed on the mucous membranes of the mouth, pharynx and respiratory tract. That in the mouth and pharynx is, for the most part, swallowed, and the absorption then takes place by the gradual conversion of the mercury into soluble compounds. In other words, the administration of mercury compounds by inhalation has no advantage over oral administration. It has the serious disadvantage of indefinite dosage. (*Jour. A. M. A.*, March 4, 1922, p. 654.)

Collosols (British Colloids, Ltd.).—Collosols is the trade name applied to certain alleged colloidal preparations of drugs made in the Crookes Laboratories by British Colloids, Ltd., London. The Collosols are recommended for external, internal, intramuscular and intravenous administration. A few years ago the Council on Pharmacy and Chemistry investigated the Collosol products and found that some of the specimens contained precipitates, and thus they were not colloidal. Commenting on the presence of precipitates, the Council pointed out that if "injected intravenously as directed, death might result, making the physician morally, if not legally, liable." In the cases in which the therapeutic claims for Collosols were examined, the claims were found to be either exceedingly improbable or exaggerated. In the Collosol "literature" there are frequent references to enthusiastic reports by Sir Malcolm Morris, K. C. V. O., F. R. C. S. E. This medical knight seems to have devoted his energies to the exploitation of Collosols and is reported to be one of the directors of the Collosol concern. (*Jour. A. M. A.*, March 4, 1922, p. 674.)

The Demand for Vitamins.—Ordinary fresh foods are the simplest, cheapest and richest sources of vitamins, yet vitamin "concentrates" are being "demanded" by the public because shrewd, forward-looking "patent medicine" exploiters are using all the subtle art of modern advertising to convince the public that it is in serious danger of vitamin starvation, and that the only hope lies in buying these alleged concentrates to make up a hypothetic deficiency. Advertising campaigns, such as these of the vitamins, constitute a vicious circle; an artificial demand is created, and then the manufacturer excuses his business on the ground that he is merely supplying a demand. (*Jour. A. M. A.*, March 18, 1922, p. 810.)

More Misbranded Nostrums.—The following preparations have been the subject of prosecution by the federal authorities charged with the enforcement of the food and drugs act: Krause's Phosphorets (Norman Lichty Mfg. Co.), consisting essentially of ferrous carbonate, asafetida and traces of phosphorus, and claimed to cure diseases resulting from a shattered nervous system. Binz's Bronchi-Lyptus (Edward G. Binz), consisting essentially of a solution containing oils of eucalyptus and peppermint, glycerin, sugar, acacia, alcohol and water, and claimed to be an efficient remedy for croup, whooping cough, sore throat, etc. Dr. Goodwin's Herbal Compound (Dr. F. A. Goodwin), a mixture of plant material containing chiefly senna, fennel, uva-ursi and unidentified plant extractives, and sold for diseases of the stomach, liver, kidneys, nerves, bowels, bladder, etc. Dubois' Pecific Pills (W. J. Baumgartner), consisting essentially of aloes, ferrous sulphate, calcium carbonate and sugar, claimed to be a reliable female tonic, etc. 4-11-44 Capsules and Injection (A. J. Benson), the capsules containing cubebs and copaiba, and the liquid, a solution of zinc sulphate and salt, sold for the treatment of gonorrhea, etc. Metzger's Catarrh Remedy and Spede Oil (Metger Mfg. Co.), the first consisting essentially of iodid and mercuric compound, gentian, alcohol and water, and the second consisting essentially of gasoline, oil and eucalyptus, methyl salicylate, menthol, camphor and ether. (*Jour. A. M. A.*, March 4, 1922, p. 672.)

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THE HAVANA MEETING.

Arrangements for the forty-ninth annual meeting of The Florida Medical Association which is to be held in Havana, Cuba, are being rapidly completed. The actual date of the meeting has been set for June 27th and 28th. The party leaving Jacksonville will travel by way of the Florida East Coast Railway, leaving the Terminal Depot at 3 p. m. on Sunday, June 25th. Arriving in Key West at 9:10 the following morning, connections will be made with the Peninsular and Occidental Steamship Company's magnificent S. S. Cuba which will sail at 10 a. m., arriving in Havana at 5 p. m. the same day (Monday, June 26th).

The Tampa party will sail on the S. S. Cuba on Sunday afternoon, June 25th, from Port Tampa, at 2 p. m., arriving in Key West the following morning at 7 o'clock, the entire party sailing for Havana at 10 o'clock.

The Florida East Coast Railway has granted to the Association an excursion rate from Jacksonville to Havana and return of fifty dollars and forty-five cents ($50.45), with a proportionate rate from all stations on the line south of Jacksonville.

The Peninsular and Occidental Steamship Company has granted for the benefit of Association members living in the Tampa territory an excursion rate of thirty-five dollars and fifty cents ($35.50) from Port Tampa to Havana and return by way of Key West. To this must be added three dollars for revenue stamps.

Association hotel headquarters will be at the Hotel Sevilla, where a special rate has been extended to members of the Association, their families and guests. The following room rates will prevail: Rooms facing the court (two in a room), $6.00 per day; rooms on the outside (two in a room), $8.00 per day. All rooms having baths.

The officers of the Association have made no attempt to arrange a return schedule, as it is anticipated a large number of those in

attendance will make side trips after the Association adjourns on the 28th. As a matter of general information, however, steamers sail from Havana for Key West daily at 10:30 a. m., excepting Sundays, and for Tampa on Tuesdays and Saturdays at the same hour.

It is requested that all members in the Jacksonville territory anticipating making the trip notify, as early as possible, Dr. Graham E. Henson, Secretary, Florida Medical Association, Consolidated Building, Jacksonville, stating the number that will be in their party and the Pullman space desired.

Members living in the Tampa territory going by way of Port Tampa, should make their reservations through Mr. R. D. Stephens, ticket agent, the Peninsular and Occidental Steamship Company, Port Tampa, Florida.

The Secretary of The Florida Medical Association has recently received a communication from the Secretary of The Georgia Medical Association stating that a number of Georgia physicians had expressed a desire to make the trip to Havana, and asking whether they would be welcome and as to whether they would be given the benefit of excursion and hotel rates. This has been secured for them and the Secretary of The Georgia Medical Association assured that all would be welcome.

A large time is anticipated by all. "Ain't it a grand and glorious feeling?"

JACKSONVILLE CLINIC.

The Duval County Medical Society is arranging for a clinic week to be held in the hospitals of Jacksonville, beginning Wednesday, and concluding at noon Saturday, June 7th to 10th, to which the doctors of Florida and South Georgia are invited. Programs are expected to be ready about May 15th. The arrangements are in charge of Drs. A. H. Freeman, Clayton Washburn, and C. J. Lewis.

THE ST. LOUIS MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

The arrangements of the St. Louis profession for the meeting places for the session of the A. M. A., which is to be held in their city May 22nd to 26th, next, are singularly fortunate and convenient. Never has the Association been so well favored in this respect. The district in which the meeting is to take place is at the west edge of the business section of the city, easily accessible from all directions by street car or otherwise, and not more than fifteen minutes' street car ride from the most distant hotel. The grouping of the meeting places is so compact that should one walk from the Registration Building (Moolah Temple) to the farthest hall, it can be done in ten minutes or less. From section to section is a matter of from one to five minutes. The convenience of the location and arrangements of the different halls is more outstanding than in any other city in which the Association has met, and a decided improvement over the accommodations which were had at the meeting in St. Louis in 1910.

The registration office, postoffice and commercial exhibit is to be in the Moolah Temple (Shrine), a beautiful and commodious building on Lindell boulevard, two blocks west of Grand avenue. At the other extremity of the group is the Odean, the home of the St. Louis Symphony Orchestra, with a main hall which seats better than 2,000, and several lesser halls. The main hall will be used for the opening session. Its acoustics are particularly good and suited to our purpose. The Sections on Practice of Medicine and of Diseases of Children meet here. In the assembly hall of the same building the Sections on Pharmacology and Therapeutics, and on Pathology and Physiology will meet. (It will be noted that there has been an aim to foregather closely allied sections.) The Sheldon Memorial, a very beautiful,

new hall on Washington avenue one-half block west of Grand avenue, which most admirably meets all requirements, will be the meeting place of the Sections on Ophthalmology, and Laryngology, Otology and Rhinology. The Section on Surgery, General and Abdominal, and on Obstetrics, Gynecology and Abdominal Surgery, will be held in the Third Baptist Church on Grand avenue, a situation well suited to the demands. The Sections on Orthopedics and Nervous and Mental Diseases will meet in the Law School of the St. Louis University on Lindell avenue, a few steps west of Grand avenue. The hall easily seats 500 and is both comfortable and convenient. Dermatology and Syphilis and Urology will use the large Union Methodist Church on Delmar avenue just west of Grand avenue, which meets every requirement. The Sections on Gastro-Enterology, Proctology and on Preventive Medicine will use the large hall in the Musicians' Club on Pine street east of Grand avenue, and next to the building of the St. Louis Medical Society, where the House of Delegates will hold its sessions. The Section on Stomatology is assigned to the assembly hall of St. Peter's parish house, one block west of Grand avenue on Lindell. Immediately in this district will be found three of St. Louis' most important clubs, the St. Louis, University and the Columbian. Restaurants catering to every grade of patronage are numerous in the district, and precautions have been taken to insure that normal rates continue during the meeting.

The St. Louis profession is preparing for an unusual attendance. Hotel reservations are coming in rapidly, but it is purposed that even the late-comer shall be comfortably housed. The wise traveler, however, makes his reservation as early as he finds it possible. Dr. M. B. Clopton, 3525 Pine street, St. Louis, is Chairman of the Committee on Sections and Section Work.

THINGS WE OUGHT TO KNOW.

That many eminent physicians and surgeons have been sons of clergymen. Robert James Graves was one of these. Graves was the son of a Dublin clergyman (1796-1853) and was graduated in medicine in 1818, about the time Chicago was a village. In 1835, Graves published in *The London Medical and Surgical Journal* a description of exophthalmic goiter so admirable in outline that the disease goes by his name to this day. He requested that the phrase, "He fed fevers," should be his epitaph. He also wrote early accounts of angioneurotic edema and scleroderma. He inaugurated timing the pulse by the watch and discarded the old lowering or antiphlogistic treatment of fevers. Graves was tall, dark and somewhat sarcastic of speech, but really had a warm heart. His methods made a profound impression upon his Irish colleagues of his time.

We should know that William Stokes (1804-78) was Graves' colleague. In 1825, Stokes came on record by his publication of his "Introduction to Use of Stethoscope," and in seven years published his first account of Stokes-Adams' disease. His treatises on diseases of the chest and diseases of the heart and aorta won him lasting fame.

The prominent English clinicians of the days of Graves and Stokes were John Bright, Sir Dominic John Corrigan, Thomas Addison, James Parkinson, Thomas and Joseph Hodgson. It was not until the beginning of the nineteenth century that there was any real organization in medical progress. It was not until a long time after the Revolutionary war that there was any medical literature published in America. The first medical book published in America was published in Mexico City, in Spanish. Benjamin Franklin published some medical literature on his own press in Philadelphia at an early date and described the use of a flexible catheter.

It is well to know that Thomas Hodgkin (1798-1866), of Tottenham, England, was a Quaker and always wore their distinctive dress. Hodgkin was a reformer by nature and, it is said, was driven out of Guys Hospital by his independence. He was distinctly independent and almost eccentric. The eccentricities of those great men early in the last century may have caused many rudimentary physicians to assume wisdom and wish to appear learned and wise, as was conspicuous fifty years ago amongst medical men. Hodgkin's reputation was made from his original work and observation upon simultaneous enlargement of the spleen and lymphatic glands which Wilks later called "Hodgkin's disease." He wrote an account of aortic insufficiency in 1829 which antedated Corrigan's classical contributions.

Richard Bright (1789-1853), of Bristol, England, was the leading consultant in London at that time. Bright was connected with Guy's Hospital for over twenty-three years and at other times did considerable traveling in Europe. It is said that he illustrated some of his own works by drawings he had made during his travels. He was simple and unprejudiced, seeking the truth. As a botanist and geologist, he ranked high. His reputation in medicine was established in making a distinction between cardiac and renal dropsy. This work was of immense importance to medical practice. It was in observation that he excelled, and it is recorded that he could not theorize. His pathological work on the kidneys was the greatest of his time. His accounts of pancreatic diabetes and acute yellow atrophy of the liver were the authority in that day. In his work he described certain convulsions of Jacksonian epilepsy and "status lymphaticus." He gave accurate accounts and plates of the pathology of nephritis, cerebral disease and acute yellow atrophy of the liver. He appreciated the worth of Addison, his colleague.

Thomas Addison (1793-1860), of Longbenton, Cumberland, was associated with the celebrated Bright at Guy's Hospital in London. Conjointly with Bright, he wrote a practice in which he was frankly agnostic regarding obscure phenomena. Addison was never the successful practitioner that Bright was, however. He was more of a writer, lecturer and teacher, at home with his pupils in hospital work. He was shy, sensitive, and brilliant. His haughty manner concealed his shyness. As a pathologist and diagnostician, he excelled. Addison attached little importance to drugs and drugging (which was perhaps excessive at that time), though "Addison's pill" of calomel, digitalis and squills, for hepatic dropsy in syphilis, is still used. In 1849 he described pernicious anemia and disease of the suprarenal capsule ("melasma suprarenale"). This work really inaugurated the study of the ductless glands. He wrote the first book in English on the action of poisons in the living body (1829). It was Trousseau who proposed to call the suprarenal syndrome "Addison's disease."

We ought to appreciate more the contributions to medicine made by that wonderfully versatile American, Benjamin Franklin (1706-1790). We had little or no literature in American medicine in his day. There have been few men of his equal in any age. This remarkable man invented bifocal lenses (1785) and a flexible catheter and contributed to the treatment of nervous diseases by electricity. He wrote on deafness, gout, sleep, lead-poisoning, heat of the blood, infection from dead bodies, death rate in infants and medical education. Quite a legacy for even a medical man! He wrote, by request, a history of the Pennsylvania Hospital of Philadelphia, of which he was the principal founder (1751). This history was printed on his own press. He wrote a pamphlet on inoculation in smallpox, and his "Dialogue With the Gout" has been republished many times.

PUBLISHER'S NOTES

A NEW LOCAL ANESTHETIC.

From time to time new anesthetics to take the place of cocaine have been proposed and, to some extent, used, but without utterly supplanting the older and rather dangerous drug. Now, however, the surgeon has a substitute that is a decided improvement. The new local anesthetic is called Butyn (pronounced *Bute-in,* with the accent on the first syllable). It is the discovery of Professors Roger Adams and Oliver Kamm, of the University of Illinois, and Dr. E. H. Volwiler, of The Abbott Laboratories, Chicago.

The anesthetic has been passed by the Council on Pharmacy and Chemistry of the American Medical Association. In his report, Dr. E. E. Bulson, Jr., for the Committee on Local Anesthesia, Section of Ophthalmology, said that it acts more rapidly than cocaine and its action is more prolonged. Less is required, and in the quantity necessary it is less toxic than cocaine. It has other advantages which make it highly useful, especially for eye work. A solution can be boiled without impairing its efficiency.

The Abbott Laboratories is supplying Butyn, in tablets (with and without Epinephrin) and 2% solutions, which may be had without narcotic blanks.

IODALBIN.

The iodides have held their ground in professional esteem, not because but in spite of the attitude of the patient toward them. They are disagreeable to take, and yet, in many cases, prolonged courses of treatment are necessary. An iodine compound that does not dissolve in the stomach, and is therefore without irritating effect upon that organ, is marketed by Parke, Davis & Co. under the name Iodalbin—an albuminate or protein compound of iodine.

Iodalbin contains about 22 per cent of iodine in organic combination—not a large proportion as compared with the iodides, and yet the dose is about the same, for the reason, as stated by the manufacturers, that the iodine in Iodalbin remains in the tissues, accomplishing its therapeutic mission, much longer than the iodine in inorganic combinations.

Iodalbin is put up as a powder in ounce vials and in 5-grain capsules.



Calcreose

In Bronchitis and Tuberculosis

Calcreose is particularly suitable as an adjunct to other remedial measures. **Calcreose** contains 50% creosote in combination with calcium. **Calcreose** has all the pharmacologic activity of creosote but is free from untoward effects even when taken in large doses for long periods of time.

Sample 4 grain tablets supplied to physicians upon request.

THE MALTBIE CHEMICAL CO., NEWARK, N. J.

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ORIGINAL ARTICLES

REPORT ON A SERIES OF FIFTY OPERATIONS ON THE THYROID GLAND.*

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Tampa, Fla.

The domain of endocrinology holds an increasing interest alike for the internist and the surgeon. More knowledge has accumulated up to the present time regarding the thyroid, the parathyroids and the hypophysis than any of the other glands of the endocrine system. But through study by certain individual workers and organizations, such as the Society for the Study of Endocrinology, rapid progress is being made in the development of knowledge on the other endocrine glands.

The thyroid holds the center of interest, due perhaps to two or three causes: First, its superficial anatomical location, making it easy of examination; second, its greater frequency in becoming diseased; third, its being easier to treat.

The diseases of the thyroid gland that are amenable to surgical treatment may be divided into two great classes: (1) That which produces an over-function (Grave's disease, Basedow's disease; exophthalmic goiter). (2) The neoplastic growths, with or without hyperthyroidism.

The symptoms of thyrotoxicosis may be enumerated under six headings: (1) The struma or enlargement of the gland itself—hyperplasia. (2) Symptoms referable to the autonomic nervous system. (3) Metobolic disturbances. (4) Those due to disturbances of function in other endocrine glands. (5) Cerebral symptoms. (6) Blood changes.

The symptoms in cases of neoplastic growths of the thyroid gland may be as follows: (1) Regional enlargement of the gland. (2) Those of either hyper or hypothyroidism, depending upon whether the healthy gland is overstimulated by the presence of the growth, or whether the healthy gland may be so pressed upon that its function is destroyed. (3) Symptoms due to pressure, due to the size or location of the growth. (4) Symptoms that may evidence malignancy.

The indications for operation in Grave's disease will depend upon: (1) The certainty of diagnosis. (2) The failure of medical treatment properly carried out for sufficient time. (3) Selection of period before thyrotoxicosis has not lasted too long.

The operative methods vary, according to the case, from that of ligature of the arteries to subtotal thyroidectomy, sometimes including thymectomy. The series of fifty consecutive cases here reported constitutes my first fifty cases which were subjected to operation.

There were twenty-eight, or 56%, cases of hyperthyroidism or exophthalmic goiter. The remaining cases, or 44%, were adenoma of the thyroid, 10% of which were cystic. One case of cyst adenoma was infected and abscess formation occurred before operation. One case of hyperthyroidism was a case of dementia praecox.

The types of operation were as follows: In one case incision, curettement and drainage was done; ligation of superior thyroid vessels was done in one; lobectomy was done in seven cases. Excision of single or multiple adenoma, with or without cysts, was done twenty-one times. Subtotal thyroidectomy was done twenty times. The technique employed was that of Kocher as modified by

*Read before the forty-eighth annual meeting of the Florida Medical Association, at Pensacola, May 10, 11, 1921.

Chas. Mayo, preserving the posterior capsule. Five cases were done under local anesthesia. Forty-five cases were done under ether administered by the open method. There were no deaths. End results are as follows:

Four out of seven lobectomy cases have been permanently relieved of all symptoms except the exophthalmus, which has improved. One case which was operated upon in the early part of the series, in which a single lobectomy was done, has been operated upon twice since elsewhere, nearly all of the gland having been removed at the last operation three years ago. This case is still suffering from marked toxic thyroid symptoms, though much improved temporarily following all three operations. The two remaining lobectomy cases are greatly improved.

The ligation case was so improved by the ligation that further operation was refused. All of the adenoma cases have been completely relieved. Nineteen of the twenty cases of subtotal thyroidectomy have been relieved of all important symptoms except the exophthalmus, which has been improved.

In two cases—one a lobectomy case, the other a subtotal thyroidectomy case—hyperplasia of the remaining portion of the gland occurred with a return of the symptoms, complete in one and partial in the other. These two cases illustrate the power of the thyroid gland to reproduce itself. This power is shown by only one other organ in the body, viz: the liver.

The recurrent laryngeal nerve's function was disturbed in five cases, which was temporary. There were two cases of collapse of the trachea from softening of the rings, but tracheotomy was not necessary in either case for relief. There was one case of accidental injury to the internal jugular vein, which was torn longitudinally—the tear was sutured with fine catgut and no harmful results followed.

There were no cases of tetany following operation in these cases. Post-operative acute hyperthyroidism occurred five times in the series. Drainage was used in all cases of hyperthyroidism.

About 80% of this series of cases came from without the state, many from the so-called goiter zone about the Great Lakes, some coming from the mountainous district of West Virginia. About 20% originated in this state. My observation has agreed with that of Jones, of Atlanta, to the effect that the goiter incidence in the southeastern part of the United States is much smaller than in other parts of the country.

The tendency of today is towards taking more and more of the gland in doing thyroidectomy for Grave's disease, in most cases leaving only a small portion of the gland clinging to the posterior capsule. This tendency is bringing better results.

FLORIDA'S PROGRAM FOR THE ERADICATION OR CONTROL OF VENEREAL DISEASES.*

GEORGE A. DAME, M. D.,

Acting Assistant Surgeon, United States Public Health Service; Director Bureau of Venereal Diseases, Florida State Board of Health.

While venereal disease is a most ancient enemy of the human race, it is only within the past few years that it has become convincingly apparent that there is most urgent need of concerted action on the part of all people toward its eradication or control.

The fight against venereal disease was greatly strengthened by the enactment by Congress, on July 9, 1918, of the Chamberlain-Kahn bill by which there was created the United States Interdepartmental Social Hygiene Board and a Division of Venereal Diseases in the United States Public Health Service.

There was already engaged in this work the American Social Hygiene Association, a great national voluntary organization deal-

*Read before the forty-eighth annual meeting of the Florida Medical Association, at Pensacola, May 10, 11, 1921.

ing with problems constituting the general field of social hygiene.

These three great agencies, working through the various State Boards of Health, are carrying on a very active and extensive campaign against venereal disease throughout the United States.

For the purpose of co-ordinating and systematizing the work in this state and for the purpose of more fully co-operating with the national agencies, the Florida State Board of Health has created and organized a Bureau of Venereal Diseases.

This bureau has, since its organization, carried on a very active and extensive work. In January, 1921, the State Board of Health, co-operating with the United States Public Health Service, the United States Interdepartmental Social Hygiene Board and the American Social Hygiene Association, formulated one of the most ambitious programs for the eradication or control of venereal disease ever yet attempted by any state. A very capable and efficient personnel was loaned to the Bureau of Venereal Diseases by the national agencies previously mentioned.

A careful and accurate survey conducted by the State Board of Health, co-operating with the Public Health Service, of rural industrial plants such as sawmills, turpentine plants and phosphate mines, showed an actual infection rate for venereal disease running from thirty-four to well beyond fifty per cent of the total population surveyed.

Examinations of delinquent women arrested in different cities of the state showed an infection rate running from seventy-two to ninety-eight per cent.

As a result of careful examinations of the prisoners confined at the Jacksonville city prison farm, it was found that the percentage of infection was eighty per cent of the total number examined.

Investigation of reported cases showed that a considerable percentage of the sufferers from venereal disease were innocently infected.

When these figures are applied to the state as a whole, it must certainly be of such a total as to impress any citizen of the enormous burden the state is bearing as a result of venereal disease.

As applied to industry: The loss of time from sickness; the enormous labor turnover due to sickness and death; the loss from inefficiency of such labor; the expense of caring for such cases by plant physicians.

As applied to upkeep of state institutions: The care of a large percentage of the insane, the feeble-minded, the epileptic and the blind; the care of delinquents in the industrial schools; the upkeep of jails and prisons; the support of charity hospitals and poor farms.

As applied to the individual: An incalculable moral loss; sickness, poverty, unhappiness and death; the disruption of homes; the propagation of defective children to bankrupt future generations.

The State Board of Health early became convinced of the necessity for a comprehensive and energetic program. It must be evident to any public-spirited citizen that such a program was and is still necessary for the betterment of public health conditions in the state of Florida.

The aim of the Bureau of Venereal Diseases, through its present program, is to reduce the prevalence of venereal disease as much and as rapidly as possible. It is sought to accomplish this purpose through four main channels of activity: Education, organization of social hygiene committees, medical treatment and the enforcement of repressive measures.

Educational Measures

Educational measures include measures for informing the general public as well as infected individuals in regard to the nature and manner of the spread of venereal diseases and the steps that should be taken to combat them.

It is of first importance to inform the public as to the prevalence, the seriousness and the danger of venereal infection. When

the public is fully informed as to the real facts of venereal disease, the difficulty of the complete eradication of the disease once infection is established and the fearful results following the failure to effect a cure, there will be a marked decrease of insanity, paralysis, blindness and the other conditions that follow in its train.

Loyal support is being given by ministers, educators, editors, commercial bodies, clubs and citizens in general. Lectures are being given, motion pictures are being shown, newspaper articles are being published, posters and circulars are being displayed, pamphlets and other articles are being distributed and other thousands of people are being given direct instruction through our several clinicians.

The American Social Hygiene Association has loaned to the State Board of Health its large motor field truck, or "healthmobile," equipped with a complete motion-picture machine and its own electric lighting system for displaying such pictures.

By the middle of May this field truck program will have reached ninety cities, towns and villages throughout the northern and western parts of the state.

In addition to this work, lecturers have visited nearly all of the other cities and counties of the state. Motion pictures have been shown from Pensacola to Key West.

A summary of our educational activities shows the following results from January 1 to April 25, 1921:

Lectures given	219
Number of people addressed	20,300
Number of communities visited	175
Number of times motion-picture films shown	84
Number of people seeing motion pictures	15,000
Number pieces of literature distributed	30,598
Number of newspaper articles published	129
Number of persons seeking information or advice at clinics	15,376

Committee Organization

It is the purpose of the Bureau of Venereal Diseases to build up strong community effort, through local organizations or committees, that will become more and more self-sustaining. Such social hygiene committees have been formed in nearly all of the counties of the state.

These committees have as their purpose: To stimulate the establishment of clinics, conduct educational campaigns, co-ordinate law enforcement and social service activities, and by securing the cordial support of the people of the state, make it possible to secure needed laws and ordinances.

Medical Treatment

It is recognized that great effort should be directed toward the clearing up of individual foci of disease.

One of the first activities of the Bureau of Venereal Diseases was the establishment of a chain of clinics.

The bureau at this time has fifteen clinics established in as many counties for the free treatment of indigent cases of syphilis, gonorrhea and chancroid. They are accomplishing a great amount of work and thereby performing a most valuable service to the state. One thousand and thirty-four doses of arsphenamine were given to indigent syphilitics in the Jacksonville clinic during the month of March.

In addition to these stationary clinics, there is what is known as the ambulatory clinic, which moves from one industrial center to another. This clinic is for the purpose of cleaning up highly infected centers which are not sufficiently large to justify the establishment of a permanent clinic.

These clinics are for the free treatment of indigent cases of venereal disease and it is not the purpose or desire of the State Board of Health to give free treatment to persons who are able to pay. Where there is doubt as to indigency, all clinicians have been required to secure satisfactory evidence of such before proceeding with treatment.

In this way the clinics are not competing with physicians who treat these cases, but, on the other hand, are taking a rather considerable burden off the hands of physicians who have heretofore been called upon, for humanity's sake, to furnish expensive drugs

and to give valuable time to the care of patients who could not, in any degree or manner, reimburse them.

The educational work that the bureau is conducting is resulting in a larger demand for efficient treatment with consequent greater remuneration to physicians who are properly equipped.

Since January 1, 1921, and up to April 25, 1921, the following results have been obtained:

Number of persons visiting clinics for examination, treatment or advice	15,376
Number of persons treated, total	5,298
Number of persons treated for syphilis	3,638
Number of persons treated for gonorrhea	1,518
Number of persons treated for chancroid	142
Number doses arsphenamine given	6,080

These clinics are receiving the active cooperation of physicians in counties where they are now established and there are constant calls from other towns and counties for similar assistance.

These clinics were opened to fill an emergency and were hastily organized. They will be standardized according to proper methods and technique within the next three months.

Repressive Measures

It is the desire of the State Board of Health to put Florida in the lead of all others in the eradication of the great red plague.

The problem in Florida is the problem in all the states of the Union. Each is making its own fight. The Florida State Board of Health has deemed it wise to relieve the problem of moral and social issues and to make its fight on the basis of control of communicable disease. We are interested from a public health standpoint in so far as certain immoral practices may be a factor in the spread of disease.

It is necessary to distinguish between measures for the safeguarding of public health and those intended solely for the control of public or individual morals. There are some measures of control that are advocated as necessary for the protection of the health of the general public.

It is recognized that prostitution is a most prolific source of venereal disease. The supply of prostitutes must be reduced, as far as possible, by strict law enforcement. This means the absolute closing of segregated districts and the effective policing and supervising of streets, cafes, rooming houses, dance halls, amusement parks, for-hire automobiles and road-houses, in order that prostitutes will lose their means of getting customers. The convenient bell-hop and the chauffeur who pimps should be rigorously dealt with.

Take the profit out of prostitution and you automatically remove from the prostitute her props and satellites.

Laws should be enacted against the activities of these agents who are interested in the promotion of prostitution. Laws should be enacted prohibiting certain occupations to those who are venereally infected.

Such laws have been introduced into the present legislature. They should have the active support of every citizen who has the welfare of the state at heart.

Institutional Care

It is my opinion that the control of venereal disease is not materially affected by the rounding up and fining of prostitutes. Neither is the problem solved by shunting prostitutes from one community to another by suspended sentences. Nor would venereal disease be greatly reduced by the short-term jail sentence.

A higher and more humane attitude should be adopted toward the female delinquent. It should be borne in mind that a large percentage of such women are mentally subnormal, and that an overwhelming majority of them are not vocationally trained to cope with economic conditions as at present existing.

A better procedure would be to place delinquent girls under the age of eighteen in the institution at Ocala, where they can be properly trained; to place all feeble-minded girls and women in the institution at Gainesville, where they can be permanently segregated, preventing the possibility of their

ever becoming a menace through the spread of venereal disease or the propagation of an inferior type of offspring; to provide an institution for the segregation of adult delinquents who are not feeble-minded, but are a public health menace, where they can be cured of venereal diseases and finally released after an indefinite term and placed on probation.

Florida's program for the eradication or control of venereal disease is getting results. For the purpose of securing a given number of positive diagnoses, a greater and greater number of patients must be examined. In 1918 the percentage of venereally infected prisoners in the Jacksonville city prison farm was eighty, and records kept for the present year indicate that the percentage is now barely thirty.

I wish to sincerely thank the physicians of the state for their co-operation and support in this great movement.

Each physician is urged:

1. To report all cases of venereal diseases.

2. To secure prompt treatment for all venereal cases coming to his attention, either treating them himself or referring them to a clinic or physician known to be competent in the treatment of such cases.

3. Not to recommend, prescribe or sell any proprietary remedy marketed for the self-treatment of venereal diseases.

4. To give every venereally infected patient a circular of instructions, a supply of which will be furnished free by the State Board of Health.

BLOOD STREAM INFECTIONS.*

James V. Freeman, M. D.,
Jacksonville, Fla.

The title of this paper should be understood as meaning infection of the blood stream with the ordinary pyogenic organisms, particularly streptococci and staphylococci, as distinguished from infection by other organisms, as, for instance, the typhoid bacillus, or the spirochaete of syphilis.

We are all familiar with the picture of septicaemia, with its chills, high temperature, sweats and marked prostration—with its primary focus a neglected infection on the surface of the body, or perchance in the puerperal uterus. Sometimes the dominant symptoms in such a case are referable to the lung, and pneumonia or lung abscess may be diagnosed, or the symptoms may be referable to the central nervous system, with a diagnosis of meningitis or encephalitis. These cases often, or I might say usually, go on to a fatal termination, and if as a last final effort to complete the diagnosis, a blood culture is taken, an abundant growth of pus-forming organisms serves only to blacken the already gloomy prognosis.

There is probably little help for those patients who present the classical picture of septicaemia, due either to streptococcus or staphylococcus. I must admit that the idea has been firmly fixed in my mind that a blood infection with streptococcus or staphylococcus meant death. I have, however, changed that opinion, and the purpose of this paper is to present to you some of the evidence which has led to this change.

My interest in blood stream infections was especially aroused by a patient who came under observation in July, 1919, following an attack of thrombo-phlebitis in the left leg. The history may be briefly summarized as follows:

Case 1.—F., male, 42 years old. Has suffered at various times for over twenty years with attacks of thrombo-phlebitis. Has never had typhoid fever; is subject to colds which originate in the throat, and are often followed by bronchitis with persistent cough, and mucco-purulent expectoration. General health excellent. No venereal disease, no tuberculosis; one attack of malarial fever in 1911. No kidney disease.

Attacks of phlebitis have been more fre-

*Read before the forty-eighth annual meeting of the Florida Medical Association, at Pensacola, May 10, 11, 1921.

quent in the past ten years. One very long attack began in November, 1913, and lasted until March, 1914. During this attack the patient had a small pulmonary embolus, as evidenced by sudden, sharp pain in right chest, with expectoration of mucus darkly stained with blood. Sputum has always been negative for tubercle bacilli.

Phlebitis in 1916, and again in 1919. Blood culture taken during convalesence in 1919 was negative, but a streptococcus was found in the catheterized urine, from which a vaccine was prepared and administered.

In April, 1920, this patient, following a bronchitis of some weeks standing, began to develop pains in the left leg, which previous experience led him to believe presaged another attack of phlebitis. A blood culture was made, and a streptococcus isolated, from which a vaccine was prepared and given. Phlebitis did not develop.

In July, 1920, the patient, fearing phlebitis again, requested further blood culture, which was negative. No treatment was given; no phlebitis developed.

In January, 1921, again following bronchitis, pains in the left leg led the patient to ask further blood culture. Again a streptococcus was isolated, a vaccine prepared and given, and no phlebitis developed. In short, the patient had not actually developed phlebitis since May, 1919, although his blood has on two occasions shown the presence of streptococcus. All this time the patient has remained apparently in good health, has had normal temperature, has held his weight, which averages 160 pounds, and has given no outward evidence of harboring what would ordinarily be considered a most serious blood infection.

The ideas suggested by this case led to investigation of the blood stream of other cases where there seemed a possibility of infection.

Case No. 2.—S. B., schoolboy; age 7. Developed an illness in September, 1919. The epitrochlear and axillary glands of right arm were slightly enlarged, and there was a small, practically healed area of infection on the hand. Fever persisted for some days, during which both eptrochlear and axillary glands softened, and were opened and drained. Neck glands were somewhat enlarged, but did not suppurate; leukocytes 10,000. The boy seemed ill out of proportion to the local condition, but after drainage of abscesses was apparently making a recovery.

A short time later, this boy suddenly developed high temperature with convulsions, for which none of the usual causes could be found. A blood culture was then taken, staphylococcus found, and a vaccine prepared and given. The boy made a complete recovery.

Again in May, 1920, this boy developed enlarged glands in the neck, on the right side, where they had previously been enlarged, and his mother at once asked for investigation.

The boy was not really ill, but showed a leukocytosis of 11,500, and the picture of secondary anemia. Stools were negative. Blood culture again showed staphylococci, and a vaccine was prepared and given. No illness developed. Subsequently this boy's tonsils and adenoids were removed, and he has improved in general health.

Case No. 3—S. H., male, colored; 4 years. Taken ill December, 1919, with an infection involving the respiratory mucous membranes. Throat culture negative for diphtheria. Temperature remained high, arthritic symptoms developed, and sepsis was suspected. The blood culture was positive, and the administration of a vaccine was accompanied by a return to health. Tonsils and adenoids were subsequently removed, and he has since remained well.

Case No. 4.—Miss R.; age 35. January, 1920, thrombo-phlebitis in right thigh; first attack. Not very ill. Has had badly infected tonsils for years. Blood culture showed staphylococcus infection, and a vaccine was prepared and given. After about two weeks in bed, the patient seemed suffi-

ciently recovered to return to her home in North Carolina. She reported subsequently a long period of bed confinement after her return home.

Case No. 5.—J. H., male; 16. Came under observation in January, 1920, for an illness which had existed for two or three days. Had had a bad cold about ten days previously.

This patient was the picture of a fairly severe acute toxaemia, suggesting typhoid fever. His temperature was 103½; pulse, 120. He had, also, an old endocarditis of the mitral valve, which had not interfered with much athletic activity and the winning of contests in running and swimming. Upon examination, the heart was found extended to the left, with sounds of poor quality and a systolic blow at the apex, which had long been present. There were no intestinal symptoms, and the widal and urine were both negative.

With a tentative diagnosis of acute endocarditis, a blood culture was made with positive findings. A vaccine was prepared and given, and under absolute rest in bed with ice bag, salicylates and vaccine, the temperature and other symptoms were controlled, and steady progress made to recovery in about four weeks.

In March, 1920, this boy developed cardiac symptoms, which were interpreted as a toxic myocarditis, resulting from his previous infection. He did not look ill, as he had in January; had no fever, and made satisfactory progress under a short period of rest in bed, with digitalis and iron. He has since remained well, and has led an active life at a military school.

Case No. 6.—J. S., male; 15; January, 1920. History of severe illness of the character of general infection—convulsions, high temperature, kidney symptoms prominent.

Seen about the fourth day, at which time sensorium was clear, and there was practically no edema. Urinary findings at that time hardly warranted the diagnosis of nephritis, and I suspected blood infection from diseased tonsils. Blood culture by Keidel tube was negative. Tonsils were removed a month later, and health has gradually returned to normal.

It is interesting to note that this lad showed an albuminuria for weeks when up and about, but none when kept in bed. *Orthostatic albuminuria.*

Case No. 7.—K. K., male; 4 years; May, 1920. Ill for several weeks with bronchitis and asthmatic attacks at night. Was not especially sick, and showed no temperature under my observation. Signs of bronchitis confined to right lung. X-ray, negative; sputum, negative. Blood culture finally taken and streptococcus found. Vaccine prepared and administered, with recovery, and no illness of note since that time.

Case No. 8.—G. W. G., male; age 40; July, 1920. Ill while away from home with symptoms of a general infection — chills, fever, pain in joints. Said his face had been puffy. Temperature and pulse, normal. Urine, negative. X-ray of his teeth showed small apical infection of left upper cuspid and an old healed granuloma of left lower bicuspid. Blood picture was as follows: Red blood cells, 6,000,000; leukocytes, 4,600; Hb., 75%; smear, negative. Blood culture showed one colony staphylococcus albus. A vaccine was prepared, but not given. Infected teeth were not removed. All symptoms cleared up spontaneously except as they were assisted by an iron tonic.

Case No. 9.—L. E. M., male; 45 years of age. First seen in August, 1920. History of recurring attacks of fever with chills and sweats, at intervals for past two or three months. Had been examined thoroughly at one of the leading medical centers, and a diagnosis of "nervous exhaustion" given. Many teeth were removed for infection.

Patient during attack was extremely ill; temperature, 104; rapid pulse, and symptoms of collapse. Fever persisted about five days. No local symptoms. All methods of diagnosis had failed. Attending physician sus-

pected gall bladder infection, but there was no jaundice and no marked local tenderness. Blood examination and blood culture had been negative. Sputum and stool were negative. He had had, a few months previously, a growth on the neck which was pronounced "sarcoma" on clinical grounds. This had been treated by radium, and only a scar remained at the time of my examination.

The periodicity of attacks suggested malarial infection, or relapsing fever. The spleen was not enlarged. Persistent search of blood smears by at least three men failed to reveal any malarial parasites. I have never seen the spirillum of relapsing fever, but think I should have found it in some of the many smears I made after consulting the authorities regarding this disease. Wright's stain was used.

I asked for further blood culture, and staphylococcus was grown from the blood. A vaccine was prepared and given. Attacks of fever continued, however, and the patient died during the latter part of August. No post-mortem was permitted.

Case No. 10.—J. P. M., male; age 44. Seen in September, 1920. Complained of general debility and stomach trouble. Pain in appendix region. Had lost fifteen pounds; looked ill; gave history of fever. Had been treated for "colitis." Skin slightly cyanotic; pulse rapid. Heart sounds not clear nor impulse forcible. No enlargement; no murmur. Blood pressure, 128-96; blood smear, negative; Wassermann, negative; stool, negative. Had several infected teeth. No definite findings in abdomen; urine showed a small amount of albumen; no casts. Possibility of blood stream infection led to blood culture. This was negative. Subsequent investigation and observation led to no definite diagnosis. The man was palpably neurotic.

Case No. 11.—Lillian S.; age 9. Seen in October, 1920. Acutely ill. Pain and swelling in region of left knee. No fluid made out. Small ulcerated area on left heel. Physical examination, negative, except as stated. Patient looked the picture of severe infection; temperature, 102½; pulse, 120. Removed to hospital with diagnosis arthritis. Knee aspirated following day. Very little fluid obtained. No organisms. Blood culture showed stapyhlococcus albus infection.

Fever continued, with much pain in leg and swelling in thigh. Osteamyelitis suggested and confirmed by X-ray. Leukocytes, high. At operation, much pus was liberated which showed pure culture of staphylococcus. A vaccine was prepared from the blood growth, and administered without any effect upon the progress of the case. Fever of suppuration continued for weeks, with free drainage of pus and various surgical maneuvers for freer drainage and release of sequestra.

Case No. 12.—Mrs. P.; 75 years old. Seen in January, 1921, with carbuncle on neck. Had previously had a boil on her nose, and was possessed of infected teeth. Staphylococcus found in the carbuncle, which was excised under ether. A metastatic abscess of left epitrochlear gland, several days later, suggested infection of the blood stream, and staphylococcus albus was found on culture. A vaccine was prepared and administered.

It is interesting to note that staphylococcus was also grown from this patient's urine. She had had a severe pyelitis two years previously. In this instance, there was tenderness of the right kidney for several days, with increased temperature and pus in the catheterized urine.

Other than the above mentioned facts, the old lady completed her convalescene successfully.

Case No. 13.—Wm. M., male; age 21. Acute urethritis, gonorrheal. April, 1921. Referred for treatment, which speedily controlled discharge.

Seen again April 19th, at which time there was pain, tenderness and swelling of the entire left leg, with tenderness especially marked in the saphenous region. Diagnosis,

phlebitis. Blood culture made the following day showed staphylococcus albus and a small, unidentified bacillus. Both these organisms were agglutinated by the patient's serum. Improvement in the leg condition led to withholding vaccine. Temperature, 99 to 100.5; pulse, 110-120.

On April 27th pain began in the right leg, and soon this leg duplicated the original picture of the left leg.

Second blood culture made April 29th, which disclosed staphylococcus and a small bacillus. On the first culture, staphylococci and bacilli had shown in about equal proportions; on the second, the small bacillus greatly predominated. A vaccine was prepared from the second culture, and is now being given.

The blood cultures in these cases were made by Dr. B. L. Arms, of the laboratory of the State Board of Health at Jacksonville, except as follows:

a. First culture in Case No. 1 taken after phlebitis had subsided. No growth.

aa. Culture from urine in this case showed a streptococcus. Both of these cultures by Dr. I. C. Youmans, at Riverside Hospital, Jacksonville.

b. Case No. 6. Culture taken by myself on an out-of-town case by Keidel tube. No growth.

c. Case No. 12. Culture from blood and from urine by Miss Travis, technician at Riverside Hospital, Jacksonville.

Summary.

Of the thirteen cases here reported, positive cultures were obtained in eleven.

Of eighteen blood cultures made on these thirteen cases, fourteen were positive, four negative.

Of the positive blood cultures, three showed streptococci, nine showed staphylococci, two showed a small bacillus in addition to staphylococci, two were not recorded.

Of the thirteen cases cited, only one (Case No. 9) resulted fatally — a mortality of 7.69%.

Case No. 8, in which only one colony of staphylococcus albus was given, may be an error.

Three cases of this series showed phlebitis. In only one was the diagnosis of endocarditis made. All of these had positive blood cultures.

Cases Nos. 1, 2, 11, 12 and 13 offer confirmatory evidence of correct diagnosis, either through repeated blood culture or the definite presence of a primary focus and the isolation of the identical organism found in the blood from secondary or metastatic foci of infection.

Cases Nos. 1, 2 and 13 showed the same organism on repeated blood cultures.

Conclusion

1. Infection of the blood stream by pyogenic organisms is a much more common occurrence than is generally believed.

2. The presence of streptococci and staphylococci in the circulating blood, although always to be regarded as a serious event, does not necessarily mean a fatal outcome.

3. Phlebitis is probably due to blood stream infection in a large majority of cases.

4. Vaccine therapy for blood stream infection is still in the experimental stage. Autogenous vaccines seem to be helpful.

DIPHTHERIA.*

B. L. Arms, M. D.,

Director Division of Diagnostic Laboratories, Florida State Board of Health.

There is probably no disease that has given the practicing physician more anxiety or demanded more rapid thought and action than diphtheria.

Laboratory researches have done much to aid in the fight against this disease, and from many angles — diagnosis, treatment and, last but not least, prevention. We will take these up in the order of their development.

In 1883 Klebs called attention to certain bacilli found in membranes in the throats of

*Read before the forty-eighth annual meeting of the Florida Medical Association, at Pensacola, May 10, 11, 1921.

those dying of diphtheria, and in 1884 Loeffler isolated these bacilli, and grew them in pure culture. With these pure cultures he produced the disease in susceptible animals, thus making possible the bacterial diagnosis that has meant so much to the patient and physician, as well as to the public.

Today not only is the diagnosis possible from cultures, but a great majority of diagnoses can be made from a direct examination of the swab, thus saving from fifteen to twenty-four hours, and time is extremely important in the treatment of this disease.

The swab examination will also demonstrate other infections, such as Vincent's angina.

In long standing cases, or in carriers, the laboratory can demonstrate if the organisms are virulent, and many cases can be released much earlier if they can be shown to be harboring only non-virulent organisms.

The next advance in the fight against diphtheria came with the introduction of antitoxin.

Loeffler, in 1884, assumed that the constitutional symptoms occurring in this disease were due to a soluble toxin, and in 1888 Roux and Yersin demonstrated that this was a fact.

About this time Von Behring discovered the antitoxin. The first attempt to apply this discovery was in Von Berghmann's clinic in 1891, but at first, on account of the comparatively low neutralizing power of the serum and the small doses used, the results were not satisfactory, although they were encouraging.

More concentrated serum was prepared, and in 1896 there was a marked drop in the mortality.

Since this time, the use of antitoxin has grown, and the dosage has been carefully studied, and as a result a single large dose at the beginning of the case is frequently all that is needed.

It is well known that the antitoxin is a neutralizing agent, and that its use is not indicated when there are no constitutional symptoms.

That it is not germicidal to the diphtheria bacilli has been demonstrated by its use as a spray in the throat, without apparent effect on the bacilli.

For many years it was advised that all contacts be given an immunizing dose of antitoxin, but this is not now considered the proper way to act.

All contacts should, however, have swabs taken from both nose and throat and, when a case is released, it is always wise to take cultures from all members of the family, even if they have not been in contact with the patient.

In spite of the fact that antitoxin has been largely used for immunizing purposes, it has had a much greater effect on the mortality than on the morbidity, for the decrease in number of cases per 1,000 population has not been over one-third.

It has long been known that age was an important factor in the incidence and mortality of diphtheria, and the following table from Park[1] is of interest:

MORTALITY ACCORDING TO AGES FROM DIPHTHERIA AS EXEMPLIFIED IN NEW YORK CITY, 1891-1900.

Ages.	*Number.*	*Per cent.*
Under 6 months	555	3.0
6 months to 1 year	1,110	6.0
1-2 years	4,263	23.0
2-3 years	3,817	21.2
3-4 years	2,900	16.1
4-5 years	1,908	10.6
Under five	14,553	81.5
5-10 years	3,052	17.0
10-15 years	241	1.3
Over fifteen	35	.2

At the present time, New York City instead of having an average death rate from diphtheria of about 150 per 100,000 in the decade before 1895, has one of about twenty-two.

The most important aids in the prevention of diphtheria are the Schick test and the toxin-antitoxin immunization.

In 1913 Schick published a method by which the presence of antitoxin in the blood and tissues could be determined very easily.

[1] Public Health and Hygiene, p. 100.

This consists of injecting a minute quantity of toxin intracutaneously, and if there is less than 1/30th of a unit of antitoxin per c. c. of blood, there is a local reaction, and when this reaction occurs, the individual is susceptible to diphtheria.

The lack of a reaction shows the presence of at least 1/30th of a unit of antitoxin in the blood, and this individual is immune to the disease.

As the immune person can carry virulent organisms in the nose or throat, the need for cultures of all contacts is evident.

The reason for the age mortality from diphtheria is shown by the Schick test:

Susceptibility of Various Ages to Diphtheria as Indicated by Diphtheria-toxin Skin Test[2] In Over 20,000 Persons.

Age.	*Average Susceptibility.*
At birth	10 per cent
Under 4 months	15 per cent
4-6 months	30 per cent
6-9 months	60 per cent
9 months to one year	75 per cent
1-2 years	75 per cent
2-3 years	65 per cent
3-5 years	40 per cent
5-10 years	30 per cent
10-20 years	25 per cent
Over 20 years	20 per cent

Figures obtained from the examination of those in the army corroborated the finding of those in the age group over twenty years.

The use of the Schick test is of almost inestimable value in diphtheria outbreaks in institutions or schools, as it shows who are the susceptible ones among that group.

It has been shown, so far as time has permitted since the discovery of this test, that with very few exceptions when a negative reaction is obtained this is evidence of permanent immunity. As a rule, when the oldest child in a family gives the reaction, the others will also, and, on the other hand, if the youngest child over six months of age gives a negative, the other children in that family will show no reaction.

All nurses should be tested, for there is no more need to have a susceptible nurse for a diphtheria case than for a smallpox case.

As one advance leads to another, so the discovery of a means to determine the susceptible members of a community was followed almost immediately by the means to render the reactors immune. I refer to the toxin-antitoxin mixture.

The immunity conferred by this procedure is slow in appearing, but from the data available it is lasting, and time alone will enable us to tell just how long it persists.

Experimentation by the research laboratories of the New York City Board of Health has shown the best combination of the toxin-antitoxin mixture is to just neutralize the toxin of any poisonous property, and this produces as good an immunity as a mixture that is slightly toxic. They have also done a great deal of work on the size of the dosage and number of innoculations to be most effective. It has been shown that three months after one injection of 1 c. c. of the determined dose, about 70% of those giving a positive Schick reaction will have developed enough antitoxin to become negative, and about 80% after two injections and 90% after three.

A second series of treatments will reduce the number of positives continuing after the first three, and even this refractory remainder can be immunized by further injections.

For the past three years the State Board of Health has supplied antitoxin free to all citizens of the state, and will undoubtedly within a very short time offer the Schick test and toxin-antitoxin immunization, as these have now passed the experimental stage and are on a firm basis of demonstrated and lasting value.

[2]Park Public Health and Hygiene, p. 107.

PROPAGANDA FOR REFORM.

More Misbranded Nostrums.—The following preparations have been the subject of prosecution by the federal authorities charged with the enforcement of the food and drugs act: Blummer's Herb Tea (Lincoln Chemical Works), a mixture of althea, licorice, couch-grass, sage, senna, elder flowers, sassafras, anise, fennel, melissa, American saffron, German chamomile, dandelion, liverwort and lungwort, sold as a blood puri-

fier, etc. Parry's Vegetable Compound (Parry Medicine Company), consisting of alcohol, olive oil, water and flavoring, and recommended for various diseases. Hall's Catarrh Medicine (F. J. Cheney & Co.), consisting essentially of potassium iodid, plant extractives, cardamon, sugar, alcohol and water. LaDerma Vagiseptic Discs (Palestine Drug Co.), consisting essentially of common salts, a small amount of alum, sugar, starch and talc. Women's Pills (Fitzpatrick Drug Co.), consisting essentially of castile soap, alkaline carbonates and unidentified plant extractives. (*Jour. A. M. A.*, March 11, 1922, p. 751.)

The Future Independence and Progress of American Medicine in the Age of Chemistry.—The recent war brought about a realization of how dependent we had been on Germany for our most valuable drugs. However, before the war was over, American manufacturers were making adequate supplies of urgently needed drugs. In their work on war gases, chemists had an example of what could be accomplished in an almost incredibly short time, when facilities for research were provided on a large scale and under conditions allowing of the fullest co-operation of chemists, physicists and physicians. With the close of the war, chemists began to consider to what extent such facilities might bring about American independence in drugs. A committee appointed by the American Chemical Society has now issued a report which elucidates the subject. The report makes it clear that pharmacologic research in German universities and in privately endowed institutes are far ahead of those in the United States. Our schools of medicine and hygiene, the report continues, are largely ignoring the services which pharmacology, in close cooperation with chemists and clinicians, can render to hygiene and preventive medicine. About twenty years ago, Congress established the Hygienic Laboratory of the U. S. Public Health Service. The plan of its organization was unsurpassed by that of any laboratory in the world, but since then, Congress has failed to provide for any considerable growth of this laboratory. Enlarged and with adequate support, this laboratory could give the United States the leading place in the world in this great scientific and humanitarian endeavor toward the discovery of new drugs. If better government support of the Hygienic Laboratory cannot be secured, then a privately endowed research institute must be the goal of those who realize the vast benefits which will accrue from the proper type of research in drug therapy. (*Jour. A. M. A.*, March 18, 1922, p. 806.)

Hale's Epileptic Relief.—According to advertisements in certain cheap weeklies, Hale's Epileptic Relief is "prescribed by the best New York specialists." These advertisements offer to send a $1.50 bottle free. Those who answer the advertisement receive a 4-ounce (118.4 cubic centimeter) bottle of a brown liquid and a small package of tablets, also a sample box of Hale's Liver Tablets. The American Medical Association Chemical Laboratory analyzed these preparations and reported that the preparations give tests for ammonium, sodium, potassium and bromides, and that the bromide content is equivalent to 20.73 gm. of potassium bromide per hundred c. c. The tablets were found to contain emodin-bearing (laxative) drugs—possibly aloes. (*Jour. A. M. A.*, March 4, 1922, p. 672.)

Veratrum Viride in Pneumonia.—Medical opinion is averse to the routine use of veratrum viride in the treatment of uncomplicated pneumonia. Claims made for the use of veratrum viride are advanced for other drugs, none of which has borne critical investigation. The error on the part of those who make these claims is the result of inadequate control observations. Advocates of veratrum viride, aconite and venesection believe that by the depression of the circulation produced by the treatment they may lessen the extravasation of blood into the air vesicles and, to this degree, lessen the involvement of the lungs. The lack of demonstrable success of venesection

has led to the discarding of this once almost universally employed mode of treatment of pneumonia. It is unreasonable to expect as much or more from aconite or veratrum than from venesection. (*Jour. A. M. A.*, March 18, 1922, p. 835.)

Warn's Epilepsy Treatment.—The claims made for this nostrum are similar to those made for Maghee's Epilepsy Treatment, but they are worded more cautiously. While in the case of the Maghee preparation it is claimed that certain effects *will* be produced, the Warn Remedy Co. avers that these effects *should* be produced by the preparation. The A. M. A. Chemical Laboratory reports that Warn's Epilepsy Treatment consists of capsules, each containing approximately 0.06 gm. (1 grain) of phenobarbital (luminal), to which has been added some charcoal, and that it differs but slightly (by absence of bismuth subnitrate) from Maghee's Epilepsy Treatment analyzed previously. (*Jour. A. M. A.*, March 18, 1922, p. 834.)

Our Knowledge of Vitamins.—It is generally accepted that a well-balanced diet provides the individual with such vitamins as are necessary to maintain growth and nutrition. *The British Medical Journal*, in a leading editorial, reiterates the statement that an abundant supply of vitamins exists in all fresh vegetables and that a considerable quantity occurs in milk and meat, provided the latter substances are obtained from animals fed on fresh foods. A normal adult living on an ordinary diet containing a reasonable proportion of fresh vegetables is, therefore, certain of obtaining a plentiful supply of vitamins. Of all the mass of evidence which has accumulated relative to these substances, this fact is the point of greatest importance. It is, however, very unfortunately, the one point which those commercially inclined are unwilling to recognize. (*Jour. A. M. A.*, March 11, 1922, p. 734.)

Albert Abrams, A. M., M. D., LL. D., F. R. M. S.—Dr. Abrams has published a book on "Spondylotherapy" ("phsiotherapy of the spine"). Spondylotherapy is stated to concern itself "*only* with the excitation of the functional centers of the spinal cord." Between 1912 and 1914, Dr. Abrams gave "clinical courses" on "Spondylotherapy" in various parts of this country. More recently, Dr. Abrams had advertised that he gives a "course" in "Spondylotherapy" in San Francisco. In addition to "Spondylotherapy," Dr. Abrams has also evolved what he calls the "Electronic Reactions of Abrams," which are said to make possible long-distance diagnosis, it being necessary only to send a few drops of blood taken from the patient and allowed to dry on a slide. Dr. Abrams founded and edits *Physico-Clinical Medicine*, a quarterly "devoted to the study of the Electronic Reactions of Abrams. * * *" What seems to be the outstanding piece of apparatus, devised or invented by Dr. Abrams, of physioclinical diagnosis and treatment is the "Oscilloclast." All one needs to do, according to Dr. Abrams, is to ascertain the "vibration rate of a drug," and then to substitute the same vibration as produced by the "Oscilloclast." More recently, Dr. Abrams has extended his observations and experiments, using what apparently is a modification of the old-fashioned pith ball suspended by a silk thread from a rubber rod. This device he calls the "Electrobioscope." If there is any scientific foundation for the marvels that Dr. Abrams so picturesquely features, the scientific world has not yet found it out. (*Jour. A. M. A.*, March 25, 1922, p. 913.)

More Misbranded Nostrums.—The following products have been the subject of prosecution by the federal authorities charged with the enforcement of the food and drugs act: Devonia Mineral Water (Devonian Mineral Springs Co.), claimed to be a natural tonic and reconstructor, and to be indicated in chronic indigestion, constipation, rheumatism, etc. Jackson's Home Rheumatism Remedy (Mark H. Jackson), composed of aloes, licorice, cornstarch and Blaud's mass, and claimed to be a treatment, remedy and cure for gout, rheumatism, lumbago, sciatica and scrofula. (*Jour. A. M. A.*, March 18, 1922, p. 834.)

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THE FORTY-NINTH ANNUAL MEETING.

The indications are that the annual meeting of the Association to be held in Havana will be well attended. Inquiries are coming to THE JOURNAL daily concerning reservations from all over the state. The Executive Committee has plans under way for the entertainment of the ladies; these will be announced in the next issue of THE JOURNAL. Several family parties have already been arranged, and there undoubtedly will be a large number of ladies in attendance. THE JOURNAL would at this time urge all those who are planning to make the trip to make their hotel reservations at once. As stated in the last issue of THE JOURNAL, the Hotel Sevilla will be Association Headquarters. Reservations should be made direct with the hotel management.

All residents of the Tampa territory should make their transportation arrangements through Mr. R. D. Stephens, Ticket Agent, the Peninsular and Occidental Steamship Company, Port Tampa. Those traveling out of or through Jacksonville and those living in the territory south of Jacksonville who will travel via the Florida East Coast Railway should arrange their transportation through Dr. Graham E. Henson, Secretary, Consolidated Building, Jacksonville.

It is desired that the approximate movement over the Florida East Coast Railway be known as early as possible so that dining car and other arrangements of detail may be properly provided for. The individual can materially assist in this matter by writing in early, stating the number in their party and the Pullman space desired.

THE ST. LOUIS MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

The American Medical Association is a scientific organization, but is composed of members with more than the average amount of "humanity" in their make-up, with social elements too long repressed. These members are weary from bearing the responsibilities of many human lives. Instead of having play-time, they have become public teachers, with no recess. The local entertainment committee of the A. M. A. has been busy preparing to show these visitors true St. Louis hospitality and to provide for them such diversions as will be both restful and entertaining.

The golfers will arrive early in order to participate in the annual tournament on Monday, May 22nd.

Tuesday evening the opening meeting will be held in the Odean, and arrangements are being made to have the music and addresses transmitted by radio to various parts of the city and to distant cities.

Wednesday evening is given over to banquets such as alumni, fraternal, sectional, etc. On this evening provision is being made to entertain the visiting ladies and those doctors who are not engaged at the alumni and fraternity dinners at one of St. Louis' noted motion-picture shows, with special musical program and other features for the occasion.

On Thursday afternoon the medical department of Washington University is giving a special tea on the grounds of the institution. Thursday evening will be given over entirely to the president's reception, and it is hoped that as many as possible of the doctors and their ladies will grace the occasion with their presence.

The committee, after visiting the offices of the mayor and the director of public welfare and being assured of their co-operation, have decided to reserve until Friday evening the chief feature of their entertainment by giving a special program for the entire association in the unique open-air Municipal Opera which has a comfortable seating capacity of 10,000. The location of the opera in the heart of Forest Park, with its special lighting effect made possible by the natural foliage of the forest, can be appreciated only by those who visit it at night. It is the hope of the committee that every visitor at the convention will remain in St. Louis through Friday evening.

The Ladies' Entertainment Committee, under the leadership of Mrs. Willard Bartlett, has arranged to take immediate charge of every lady visitor who may be persuaded to accompany the medical member of the family to the convention. They need have no fear of being left alone while the doctor is attending the scientific meetings, for practically every hour of their time has been arranged for, and it is hoped that many more ladies than usual will visit the "City of Homes"—"The Friendly City."

A special visit to Missouri Botanical Gardens is being arranged and will be an important item in the entertainment program. Among other features to be shown will be an old Italian herb garden. St. Louis is justly proud of its world-famous botanical garden.

Take the whole week off, doctor, and spend it in St. Louis. It will be time well spent. You may lose a patient, some may get well during your absence, but your increased vigor when you get back will abundantly make up for any losses. Come to our party for one full week.

Dr. C. E. Burford, 3525 Pine street, is chairman of the Entertainment Committee.

REVIEWS FROM CURRENT LITERATURE

LEPROSY

Tietze, Samuel: Brief Notes on the New Treatment of Leprosy as Approved by the Committee on Leprosy Investigation, P. H. S. Monthly Bulletin of the Philippine Health Service, September, 1921.

The various treatments given to leper patients of the San Lazaro Hospital were:

1. Sodium gynocardate (India).
2. Sodium morrhuate.
3. Collobiasis of chaulmoogra oil (Dausse).
4. Ethyl ester of chaulmoogra oil (Dean).
5. Mercado mixture.

The various drugs have been experimented with by the Philippine Health Service Leper Committee on new treatments and have given various results. The methods of administration were as follows: Intramuscular, intravenous, intradermic, and combinations of the foregoing.

The dosage varied from 5 drops to 12 c. c. The various reactions following such injections were from a slight macule to a marked toxic dermatitis with gangrene.

The patients that became negative were under treatment on an average of seven months.

1. Sodium Gynocardate (India).—In the treatment with sodium gynocardate, the following methods were used: The patient received the injection in a lying-down position, the site of injection being carefully cleaned, and the intravenous injection given slowly.

The initial dose was 5 drops, given twice a week, and gradually increased by 5 drops until the maximum of about 10 c. c. was used. Then the average of 5 c. c. was continued twice a week. This method in some cases was discontinued on account of veins becoming obliterated.

The reaction following this method was not very severe. The patients were not incapacitated after the injection and were able to do their work as before.

2. Sodium Morrhuate.—This drug, with the same technique, gave very severe reactions locally at times. The initial dose was 5 minims, gradually increased until about 8 c. c. were given; an average of 5 c. c. was then continued. The local reactions consisted principally of marked blood stasis, with subsequent superficial sloughing of the skin. This method also obliterated the veins.

3. Collobiasis of Chaulmoogra Oil (Dausse).—This was given intravenously, beginning with 5 drops and reaching an average of 2 to 3 c. c. No reactions were noticed. This method was at times combined with an infiltration of the local lesions given just under the skin. Some cases were arrested within a remarkably short time. No veins showed obliteration.

4. Ethyl Ester of Chaulmoogra Oil (Dean).—The ethyl ester of chaulmoogra oil (Dean) was given intramuscularly beginning with a dose of 1 c. c. and reaching an average of 5 to 6 c. c., given twice a week. Reaction seldom occurred. In such cases, however, the reaction principally consisted of slight fever with an outcrop of apparently new lesions. The duration of this reaction averaged about a week and terminated in a disappearance of the new as well as of the old lesions.

It is interesting to note that those apparently new lesions (reactionary) appearing during the reaction were microscopically negative.

5. The Mercado Mixture.—The mercado mixture was given intramuscularly, beginning with 1 c. c. twice a week, reaching an average of 6 to 7 c. c. The reaction of these cases was frequently very severe, incapacitating the patient for an average period of two weeks. The local reaction con-

sisted of an acute inflammatory induration, which sometimes resulted in the breaking down of tissue and abscess formation.

This method is probably the most painful among those enumerated above. The results, however, were very favorable regarding the microscopical and clinical picture.

The foregoing methods given are merely an outline of the work performed during the past year in the experimental treatment with the new drugs. The results have been so favorable that these methods are partially carried out in the Culion Leper Colony at the present time, and it is hoped that the number of negatives obtained so far warrant an outlay by the government of further large appropriations in attempting the cure of leprosy.

PUBLISHER'S NOTES

EFFECTIVE IODINE THERAPY.

A striking innovation in iodine therapy has been the introduction of compounds of iodine with proteins. The advocates of these organic combinations assert that they are less irritating to the digestic tract and less inclined to set up the disagreeable symptoms of iodism—such symptoms, for instance, as coryza and skin eruptions.

Iodalbin is one of the later iodine compounds intended for internal use. It is a compound of iodine and blood albumen, containing approximately 21.5 per cent of iodine. When administered by the mouth, Iodalbin suffers little change in the acid contents of the stomach, but on passing into the intestines it is dissolved by contact with the alkaline secretions, and on absorption exerts a physiologic action similar to that of the soluble iodides.

One great advantage possessed by Iodalbin is the fact that it is insoluble in the acid gastric contents. There is consequently less possibility of the distressing symptoms which so frequently follow the soluble iodides. Its blandness makes it acceptable to sensitive patients, and it is especially gratifying to those who object to the taste and nauseating effect of sodium or potassium iodide.

Iodalbin is manufactured by Parke, Davis & Co., whose advertisement appears elsewhere in this issue, and who offer to send descriptive literature to inquiring physicians.



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ORIGINAL ARTICLES

PREVENTABLE DEFORMITIES OF THE LOWER EXTREMITY.

HENRY C. DOZIER, M. D.,

Surgeon, Marion County Hospital, Ocala, Fla., formerly Camp Orthopedic Surgeon, Camp Funston, Kan., and Surgeon Orthopedic Section, U. S. A. G. H. No. 28, Fort Sheridan, Ill.

During my experience in the Orthopedic Dispensary, development battalions and receiving stations, at Camp Funston, I became very much impressed with the very large number of deformities following various injuries, which in themselves should have been preventable, occurring in the recruits coming to us from the draft boards. Many of the deformities were not handicaps to function, nor did they always interfere with the performance of military duty, although some of them constituted reason for discharge from the army or else assignment to some form of special duty. This was also my experience with the overseas cases returning to this country for reconstruction at Fort Sheridan, and although the reason for this condition of affairs is easily explainable on account of the large number of cases treated, the rush and the nature of the wounds associated with almost every bone and joint injury, I was impressed with what might have been the saving to our government in money and to the man in time from his home and occupation and also in suffering, if it had been possible to prevent unnecessary deformities.

In a recent paper read before an Association of Railway Surgeons, and published in the October number of the *International Journal of Surgery*, I discussed the "Preventable Deformities of the Upper Extremity," and this article is meant to supplement the subject of "Preventable Deformities" by considering those which are possible and of not infrequent occurrence in the lower extremity.

In presenting this subject for consideration, it is not my intention to discuss the treatment of fractures in general, or the detailed treatment of any other injury of the bones, joints or other structures of the lower extremity, but rather to refer to them only as they have bearing on this important subject.

Good function following an injury is what makes the difference between a good and bad result. It is probably more important as an end result than perfect anatomical apposition; good union in good position is usually essential to good function. Function certainly determines the extent and amount of future disability, which is of great importance to the injured because it affects his earning capacity, and also of equal importance to the employer because it handicaps his business, and is the principal determining factor in compensation. For these reasons, this is a subject which will not be without profit to us all.

Given a case of injury, let our first thought be, prevent deformity, then, keeping that thought constantly in mind, set about to secure its accomplishment, remembering that function is the important end to be obtained. The prevention of deformity and thereby the minimizing of disability can be accomplished first by a full and accurate survey or typing of the fracture or injury, reached through a careful examination, and accurate consideration of the anatomy involved and its function, and a faithful use of the X-ray; secondly, the treatment, the efficiency of which will depend on the individual ability and mechanical skill of the surgeon, and thirdly, the constant, or at least the frequent, observation of the injured part. This last point cannot be too strongly emphasized.

For convenience, I will consider the deformities of the lower extremity in five groups, as follows:

1st. Those of the hip joint.
2nd. Those of the thigh.
3rd. Those of the knee joint.
4th. Those of the leg.
5th. Those of the ankle and foot.

In considering broadly the deformities in the several groups, we naturally ask three questions, viz.: What conditions in each group are likely to result in deformity? Second, what deformities are likely to result? Third, can they be prevented, and if so, how? The first and second questions can be answered for all groups, as follows:

1st. Injuries of soft parts, resulting in a large amount of scar-tissue, such as occur in railroad and other industrial accidents, and certain gunshot injuries, may cause anything from slight limitation of motion to complete extra-articular ankylosis of the joint distal to the injury, if it involves extensively the different muscle groups, and this scar-tissue may involve also the nerves of the part, producing partial or even complete paralysis in the muscles supplied by the nerve—the deformity which results depending on the complete or partial interruption of nerve impulses, and upon the particular nerve involved; section or any direct injury to the nerve should be determined at the examination immediately following the injury.

2nd. In fractures, both intra-articular and shaft varieties, there may result very disabling and disfiguring deformities, if unrecognized or only partially reduced; if improperly or incompletely immobilized, and without due regard to the function of the part involved; if splints are improperly applied, or a spiral plaster cast applied too early, before sufficient time has elapsed for the subsidence of swelling; through failure to remove any splint or cast which is causing pain, or in which the circulation of the limb is the least bit interfered with—as is well known, this may be the cause of pressure paralysis and its resulting deformities, and also pressure necrosis, which may result in a considerable slough, followed by scar-tissue and its attendant calamities. It is probably unnecessary to state that a splint should never be applied too tightly, and both the splint and the part should be well padded by a liberal use of sheet cotton wadding. What I have said about the spiral plaster cast does not apply to the use of the moulded plaster splint, which I regard as ideal for both the primary and permanent immobilization of fractures, because the moulded splint conforms more nearly to the contour of the part and, therefore, does not make undue pressure at the site of injury nor on bony prominences, and since it does not make circular constriction there is not the danger from pressure paralysis or necrosis. I do not wish to be understood as condemning the spiral cast except as a primary dressing in fresh fractures. It is well suited as a primary post-operative dressing, because operations are usually performed after the lapse of some days, and then the swelling of the part does not operate to cause trouble, but even here close observation of the part for evidences of pressure, etc., is important.

3rd. Intra-articular injuries, or septic infections of joints frequently result in fibrous or bony ankylosis, which is not always preventable, and under these circumstances it is extremely important to remember function, and so place the part that only a minimum of disability will result.

The question of how best to prevent deformities in the various localities will, I believe, be answered more clearly by an anlysis of cases which actually show deformities which in most instances could and should have been prevented.

Group 1.—The hip joint, if the site of disease (as, for instance, tuberculosis), will usually assume a position of flexion, abduction and internal rotation. This is an extremely common deformity in unrecognized or improperly treated tuberculosis hip disease. Should this deformity become permanent by the occurrence of ankylosis in the

hip joint, which is the desired result in this disease, it would constitute a disabling deformity, because it leads to lumbar lordosis and an ugly limp.

In fracture of the neck of the femur, the most common deformity is shortening, abduction and external rotation of the leg. The quadriceps extensor and the hamstring groups of muscles, together with the gluteal group, contract pulling the distal fragment upward, producing shortening. Eversion, or outward rotation, is brought about mainly by the weight of the limb causing the foot to drop over on the outer side because of the solution of osseous continuity at the site of fracture. This deformity, if allowed to persist, is very apt to result in non-union, or if union should occur there will be an awkward gait and ugly limp, and more than likely incapacitate the injured for any occupation which requires much walking, climbing, etc.

It is, therefore, desirable that we should know and remember the position of election for the hip joint when ankylosis is desired (as in tuberculosis disease), or when it is unavoidable, though not desired, as in certain crushing railroad or other industrial injuries, or in certain metastatic or focal infections or gunshot injuries. Under these circumstances, what position of the limb will afford the injured the maximum degree of function? According to the greatest living orthopedic surgeon, Dr. Sir Robert Jones, "ankylosis should be encouraged in a position of very slight abduction, with the thigh extended and with very slight outward rotation of the limb." This position and the reasons given by the author for its advantages was presumably concurred in by the Orthopedic Council of the Surgeon General's Office, during the late world war, since the Orthopedic War Manual quotes them verbatim and without further comment. The reasons given by this author are as follows: "Adduction deformity brings the limb to near the middle line, interferes with the normal position of the sound limb in walking, and by involving abduction of the sound limb interferes also with a free gait. If the hip is ankylosed in the fully extended position, lordosis and the consequent trouble from backache are avoided, and there is freer pelvic movement in walking if the thigh is slightly abducted. The limb should be very slightly rotated outward, to avoid the unsightly lift of the pelvis as the patient rises on his toes in walking, due to the immobile condition of the hip joint. This gives an easier walk than if the toes are pointed straight forward." Some prominent American surgeons differ with Dr. Jones in that they consider about 10 degrees flexion of the thigh as giving greater function and less disability than when the thigh is straight.

Now, given a case of fracture of the hip, and knowing that the common deformity is shortening, and marked external rotation of the limb, and knowing also that there is considerable danger of non-union if the deformity is allowed to persist, the question arises: How best can I place this limb in order to obtain good union and good function for the injured? The answer is, perfect reduction and maintenance of fragments in apposition by proper immobilization apparatus, which means correction of deformity, which will result in good function, if no other cause for non-union exists, such as interposition of a portion of the capsule, or if the fracture is not in that portion of the neck where the blood supply is too poor for osteogenesis. What is the best method to accomplish reduction of a fracture of the hip? As we well know, it is impossible to manipulate the proximal fragment, except imperfectly through control of the pelvis. The lower fragment is accessible and under control, therefore, by extension applied to lower fragment and counter-extension applied to upper fragment through the pelvis, combined with manipulation of the great trochanter, the fragments are reduced and placed in proper apposition. This is easily said, but I think you will agree with me that it is difficult to accomplish. Assuming that it were possible to accomplish through the agency

of several trained assistants, and the X-ray showed the desired reduction, remember reduction must be maintained until an immobilizing cast is applied and set. This is more than we should reasonably expect from our assistants, and it is always more than we get. Gentlemen, it is next to impossible to accomplish the treatment of a fracture of the hip without the use of a special fracture table, such as the Hawley, or its equivalent. They are expensive, however, and not always available. The following case will illustrate what can be done when such a special apparatus is not at hand, by using a little ingenuity:



Fig. 1, Case No. 18 (G. J.)
Before reduction

Figure 1.—Case 18 (G. J.), male, age 10 years, was thrown from the back of a horse and, in falling, was struck directly over the great trochanter by a low stump, causing a complete fracture of the neck of the femur, right, at about its junction with the shaft of the bone. The diagnosis was not made in the first twenty-four hours—by his parents—but he suffered so intensely that the next day they thought that it must be more than a bad bruise, so I was called. Examination on the first visit showed about one and a half inches shortening in a limb lying in the characteristic attitude—leg rotated outward with foot everted—and considerable swelling and ecchymosis in upper third of thigh. Manipulation was impossible on account of pain. A hypodermic of morphine was given, and the patient removed to the Marion County Hospital and X-rays made. Figure 1 shows condition of fragments before reduction. The limb was immobilized by use of sand bags for five days, at the end of which time the swelling had so nearly subsided that it was decided to attempt reduction and the application of a permanent immobilizing apparatus, by the following improvised method, as we had not at that time a special fracture table:

1. Use an ordinary hospital bed or X-ray table and bind a 2x2-in., oak or pine, wooden post to each side of the footpiece of the bed or table.

2. Insert wide boards between the frame and spring, tranversely, to keep mattress from sagging, in the case of the bed.

3. Apply ordinary two-inch Z. O. adhesive plaster (Buck's extension) from about junction of upper and middle third of thigh on mesial and lateral surfaces of thigh and leg, extending six or eight inches beyond foot. Fix this plaster by a one-inch plaster strip applied spirally to prevent slipping. Then apply a roller bandage over entire adhesive plaster.

4. Attach to the distal ends of the Buck's extension a strong, four-inch muslin bandage, leaving ends about three or four feet long, for the purpose of tying to the wooden post for extension.

5. At this stage it is best to administer an anesthetic (ether).

6. Place patient in the bed with suit case or folded blankets under shoulders, the usual pelvic lifter under hips, and tie the muslin bandage ends to the wooden posts on either side of the foot of the bed, thus producing a position of double abduction of the lower extremities. It will be noted that the degree of abduction of the extremities can be regu-

lated by the distance of the hips from the posts—the closer the pelvis to the posts the greater the angle at the crotch. This would not be true with adult.

7. A broad, heavy muslin swathe is now placed through the groin and one end carried upward across ventral and the other carried upward across dorsal surface of body and fixed to a cross-bar on the head of the bed—for counter-extension.

8. After the patient is firmly attached to the head of the bed by means of the counter-extension swathe, traction is made on the fractured leg and the bandaged ends are attached to the posts; extension is further continued by means of inserting a stick between bandage and twisting. This is continued and combined with manipulation of the great trochanter until the fragments are shown by the fluoroscope or plates to be in the desired position.

9. Cut the roller bandage and remove the spiral plaster strip before the application of the permanent plaster spica.

10. Apply plaster cast, including lower thorax, pelvis, thigh and leg.

11. Patient is left in position until the cast is dry and set.

NOTE.—A pelvis, or hip lifter, can be made by any blacksmith by making a base for an old, inverted buggy step.

Figure 2 shows position of fragments after reduction, and after plaster cast was applied. This method would not be so practical in case of adult, on account of his height.

Mechanically, the result in this case is apparently perfect, and if some of the other causes for non-union in this type of fracture do not operate to bring about a bad result this boy's function should be almost, if not wholly, normal. As a matter of fact, this boy walks without a limp at this time (May 11, 1920). He can run, jump, squat and otherwise perform all the functions of a normal boy.

At best, however, a fracture of the neck of the femur is one of the most difficult problems in all surgery. The anatomico-mechanical conditions, the poor blood supply, the sluggish osteogenesis are all potent influences which are adverse to the securing of satisfactory union and good functional results. If, after a reasonable number of attempts by conservative methods, the surgeon is unable to bring the fragments into satisfactory alignment, as shown by the sterio-X-ray examination, he should not delay operative interference longer than two or three weeks. This last remark is applicable to other fractures as well, but it is believed by surgeons of experience that if ever radical measures are justifiable, they are indicated in the primary treatment of fractures of the hip at all ages where the patient is an operable risk.



Fig. 2, Case No. 18 (G. J.)
After reduction and plaster cast applied

GROUP 2.—The two most common causes for deformity in the thigh are fractures of the femur and extensive scar-tissue.

Fractures may result in deformity if improperly reduced, *i. e.*, if the fragments are permitted to remain overriding, or if proper alignment of fragments is overlooked or neglected. There is also another deformity which does not show up at the time of the injury, but appears long after you have

discharged your patient with good union and good alignment, viz., an external angular deformity at the site of the old fracture, resulting from the surgeon's advising or permitting too early weight bearing. Weight bearing in femur shaft fractures, before the union is firm and the callus is hard, will all too frequently result in the deformity shown in Figure 3, Case 118:



Fig. 3, Case No. 118
Showing external or lateral bowing at site of old united fractured femur, middle third, right. This fracture was operated for non-union, and when cast was removed, fragments were in good alignment and no shortening of limb. External bowing due to too early weight-bearing and shortening is due to the bowing.

This case (G. R.) was a boy of about 16 years of age, who sustained a complete, transverse fracture of the femur, junction of the upper and middle third, right, which resulted in non-union from interposition of soft parts, and required operation. The fragments were reduced and fixed with phospho-bronze wire, and the limb placed in plaster cast in good position and alignment. No shortening, good alignment and good union when cast was removed twelve weeks after operation. Patient was instructed to use crutches and not to bear weight on leg until after six months from date of injury. Three years later (October, 1919), this patient returned to me for an operation for appendicitis, and the deformity shown in Figure 3 was noted and the above photograph made. Seeing one of my own cases, which apparently had been a good result, ruined by too early weight bearing, made me experience a feeling of disappointment for myself and also for my patient. He will not consent to an operation for correction of the deformity, and yet he is the victim of a disfiguring deformity and an ugly, hopping limp. The lesson is obvious—prevent deformity.



Fig. 4
Unreduced fractured femur, mal-united by a spanning callus. Treated in Thomas splint



Fig. 5
Mal-united fractured femur, lower third

Figures 4 and 5 illustrate graphically the deformities which result from failure to completely and properly reduce a fracture. In Figure 4 there is union, with very little overriding (only about one inch of shortening), which offhand might be considered a fairly

good result. Examination of the plate shows marked latero-mesial separation of the fragments, with union by means of a connecting callus. The end result was a weak leg, constantly liable to re-fracture, shortening and limp, and pain at the site of fracture. It was necessary to re-fracture and bone graft before good function was restored.

In Figure 5 note the deformity which has resulted in bringing the posterior surface of the condyles of the femur in relation with the articulating surface of the tibia. At the time of injury, which was due to a shrapnel wound received in action in France, and which was badly infected, it was impossible to completely coapt these fragments, but it well illustrates a condition which is very common, even when this fracture is of the simple variety. It is almost always necessary to reduce this type of fracture by the open method. A bone graft will prevent such a deformity.

Col. Sir Robert Jones, in his "Injuries to Joints," has very fully considered the effects of scar-tissue in causing disability and deformity. The Orthopedic War Manual considers the same subject, and speaks as follows concerning the thigh: "In wounds in the back of the thigh the knee should be kept straight." This is excellent advice and if followed will save much future trouble for the injured. It is misleading in that it does not mention wounds on the anterior surface or front of the thigh, which may also be the cause of the same disability, only from the involvement of a different group of muscles.

Figure 6 shows a soldier who has received a shrapnel wound of the soft parts of the thigh, ventral surface, with an incomplete fracture of the femur, middle third, right. He was treated without a splint. At the time that this soldier came under my observation at U. S. A. G. H. No. 28, Fort Sheridan, Ill., the old fracture was the site of low-grade chronic osteomyelitis, and he was a victim of knee flexion deformity, due to the involvement of the quadriceps femoris group of muscles in a dense mass of scar-tissue, which effectively prevents contraction of this muscle group and, consequently, the leg cannot be extended. It will also be noted, by reference to the picture, that the scar extends mesially and involves the inner hamstrings, which also mechanically prevents extension of the leg. The leg cannot be further flexed at the knee because of the inability of the hamstrings to contract and also because of the mechanical check of the quadriceps femoris group. If this case had



Fig. 6
Shrapnel wound of soft parts, thigh, ventral surface, with F. C. C. incomplete femur, middle third, united now. Site of osteomyelitis. Note sinus deformity consists in "knee at right angle and scar-tissue extensively involving quadriceps group of muscles," causing lost motion at knee.

been treated in a splint with the knee straight, he would have been able to walk without crutches and earn a living, and physiotherapy in the form of ionization and massage would have gradually restored motion in the knee by loosening the "scar-tissue grip" on the muscle group.

Figure 7, Case 43, shows a case with flexion deformity following an old gunshot injury from high explosive shell, which passed through and through thigh, lower third, right, with no nerve or bone injury. His wound, according to his field card, was debrided and Dakinized and treated without a splint. The knee in this case can neither be extended or flexed, being effectively held in semiflexion by the superficial and deep scar-tissue involving all the muscles on the back of the thigh.

The knee joint will naturally assume the position of rest, which is semiflexion, unless this is prevented by the application of splints

with the leg straight. If ankylosis at the knee joint is likely, either from extra or intra-articular causes, then the position in which the knee joint is dressed is of extreme importance, if we would prevent deformity and disability as an end result. The position of election for the knee joint is with the leg fully extended, *i. e.*, with the limb straight. This is the position of Jones, and his reasons



Fig. 7
Shows Case G. S. W. (H. E.), T. & T., thigh, lower third, right, with no nerve or bone injury. Debrided and Dakinized and treated without splint. Knee assumed position of rest and wound healed with scar-tissue so involving the hamstring muscles as to completely fix knee in position shown.

given for this position seem to me to be reasonable and convincing, although I am aware that some of the American orthopedic surgeons prefer about 20 to 25 degrees of flexion at this joint. The author of this position reasons as follows: "Very good reasons may be given in favor of slight flexion, from the point of view of elegance in repose and that of ease in mounting stairs. Ankylosis, as we know, is not necessarily bony; when it is fibrous the tendency is for the flexion angle to increase by exercise. The incidence of the body weight on a slightly bent knee, unless the ankylosis is sound and bony, will increase the flexion. The position of slight flexion is mechanically a weak one, therefore, for carrying body weight. Even when new bone is forming its complete consolidation is sometimes a slow process, and if the surgeon places such a knee in a slightly flexed position, the degree of ultimate flexion is often much greater than he would wish. The advantage of increased strength and stability insured by an extended joint will generally outweigh all other considerations."



Fig. 8
Result after ionization. Now has full range motion at knee joint

Figure 8, Case 43, same patient as shown in Figure 7, shows the result after several weeks of ionization and massage. Note that the crutches are gone and the leg is completely extended. Upon discharge from the army he had full range of motion in the knee joint.

Figure 9, Case 35, shows a young officer who sustained an injury in the region of the left knee from stepping in a shell hole while on duty with the A. E. F. He had considerable pain at the time, but continued with his



Fig. 9, Case 35
Fracture, internal tuberosity of tibia, thought to be a sprain at time of accident, untreated. Patient continued to walk and has developed this genu-varum and slight genu-recurvatum deformity.

troops. Two or three days later he reported to his unit surgeon, who diagnosed a sprain, strapped knee and advised rest, but the patient did not wish to go to hospital

because he also thought the injury was trivial. No splints were applied. The subjective symptoms gradually subsided except for some pain on prolonged walking or "in wet weather," but he noticed that he was gradually getting bow-legged. He gradually developed a genu-varum and a slight genu-recurvatum deformity. X-rays, made at U. S. A. G. H. No. 28, disclosed an old fracture of the internal tuberosity of the tibia. Bear in mind that the diagnosis was sprain, and the leg was not splinted. It was necessary in this case to do an osteotomy to restore the alignment of his leg, and also to repair a small slit in the fascial expansion on the lateral surface of the knee joint.

I have reported the above case for two reasons, viz:

1st. To caution against a diagnosis of sprain, unless the X-ray is negative, for any bony injury, and the definite symptoms localizing the condition to a definite ligament is present.

2nd. To illustrate a deformity which was absolutely preventable and owed its existence to the failure of the surgeon to insist upon this patient returning to the hospital for X-rays before he allowed him to return to duty.

Group 4.—It is not my intention to say anything about fractures of the leg individually, except to remind you that here more than anywhere else our primary thought should be function. It is not enough that the fragments be in end to end position, but we should remember the possibility of rotation of the distal fragments, and the necessity for proper alignment of fragments, all of which must be maintained until union is firm and strong. The reason for particular care in the case of the leg is that the leg's principal function is weight-bearing and propulsion in the act of walking, and unless the weight of the body is properly distributed and falls in the direction and through the structures intended by nature for the accomplishment of that function, there will be subjective pain and objective deformity. In order to accomplish in our cases this desired end result, it will be necessary to be familiar with the statics involved and also the anatomical mechanism which nature has provided for the maintenance of the body equilibrium; to make a faithful use of the X-ray, not only for the purpose of diagnosis but also to determine and test the efficiency of treatment; to possess considerable mechanical skill, and frequently resort will have to be had to an open operation.

Some of the types of deformities to be expected and guarded against in the leg will be illustrated in the following cases:

Figure 10 shows a case with a preventable deformity of the leg, following fracture of both bones, consisting of anterior bowing, and a mesial displacement of the entire leg distal to the fracture, which throws the body weight on the fibula and the tibio-fibular articulation, and outer side of the foot. You will note that the anterior bowing also produces a dorsi-flexion deformity of the foot



Fig. 10
Preventable deformity of leg. Anterior bowing and lateral displacement, due to imperfect reduction

when the patient is standing, and the entire weight-bearing apparatus is disarranged. It is desirable that the body weight should fall principally on the outer side of the foot, as we shall see later, but the tibio-astragaloid and not the tibio-fibular joint was intended by nature to bear the burden of weight in standing and walking. This plate also shows low-grade osteomyelitis, several foreign bodies and sequestra, for which condition this boy was operated on. If the deformities did

not exist, he could be restored to health without disability after his recovery from the osteomyelitis.

Figure 11, Plate No. 1576, shows a fracture of the tibia at about the junction of the



Fig. 11
Posterior bowing at side of fracture, with overriding of fragments. This deformity is always preventable, is unsightly and constitutes a painful disability. Can be corrected by refracture and bone-graft.

middle and distal thirds, which was allowed to unite with marked posterior bowing.

Figure 12, same case, shows the position of the fragments in an antero-posterior view. Note the marked overriding. This fracture is oblique, and I have always found in the oblique type of fractures difficulty in maintaining the fragments reduced without resort to operation and internal fixation.

Scar-tissue in the leg is a prolific source of trouble, especially on account of its effect on the function of the tibio-astragaloid or ankle joint. The position of the joint, distal to any extensive injury of the soft parts of either extremity, should be most carefully



Fig. 12
Oblique fracture, tibia, lower third, showing preventable deformity

watched and placed in a position (the position of election) which will afford the maximum function, should scar-tissue so involve the muscle groups as to interfere with motion in that joint. The position of election for the ankle joint is with the foot placed at right angles with the leg.

Figure 13, Case 37, shows a case of extensive injury to the soft parts, without bony or nerve injury, which was treated without reference to the position of the foot. The foot naturally assumed the position of plantar-flexion, which is the position of rest and of gravity when walking on crutches. The wound healed, scar-tissue has completely bound down the extensor group of muscles



Fig. 13, Case No. 37 (Seigle)
Anterior tibial muscles partially severed and adherent in scar-tissue, resulting in "foot drop"

of the leg, which consequently cannot contract and therefore cannot dorsi-flex the foot. Scar-tissue does not involve the muscles of the back of the leg. The ankle joint and knee are normal, and all movements free on passive motion. The patient is compelled to flex his knee in walking in order to compensate for his inability to dorsi-flex his foot.

Figure 14, Case 14, illustrates the same condition with reference to the scar-tissue, and the same plantar-flexion deformity, only the injury is on the posterior surface of the leg and involves the flexor or tendo-achilles group of muscles. He also was treated without reference to the position of the foot. His foot also assumed the position of rest —and gravity plantar flexion—and with the foot in that position the scar-tissue has

densely and tightly bound down the tendo-achilles, which now acts below the wound as a mechanical check to dorsi-flexion of the foot. This case also sustained a fracture of both bones of the leg, junction of lower and middle thirds, which has united without angular deformity and with only slight short-



Fig. 14, Case No. 14
Fracture both bones, leg, lower third, with "foot drop" deformity, due to scar-tissue involving and binding down tendo-achilles, hence can neither dorsi or plantar-flex foot. Note inversion of foot (intoeing) due to internal rotation of distal fragments.

ening, but internal rotation of the distal fragments has been allowed to take place, and you will note that there is an intoeing, or pigeontoed, deformity also.

In fractures of the leg bones let us guard against shortening, angulation, rotation of distal fragments, and foot-drop. The positions of elections for the various joints should be constantly thought of whenever from any cause a patient is to undergo long confinement in bed. Prolonged assumption of one position will sometimes result in suffi-



Fig. 14½ (Cissell, Leo)
Fracture of ascending ramus of pubes, right, and of ramus ischium, right, unrecognized posterior dislocation, femur, right, osteomyelitis and preventable deformity, both hip, knees and feet.

cient capsular contraction and tendon contracture as will constitute an actual disabling deformity. Figure 14½, Case 6, illustrates just this condition. This patient received an injury of the hip, necessitating many months' confinement to bed in different army hospitals. The position is characteristic—it is the position of rest—hips and knees flexed, and foot plantar-flexed. All this boy's unnecessary deformities resulted from the efforts of the nurse to make him comfortable with pillows under knees, etc. The surgeon thought only of the pathology present, and forgot function.

In treating injuries of the foot proper, the most important thing to remember is to avoid a pronation or vagus deformity of the foot. Such a foot, if not actually, is always potentially a weak foot. Even exaggerated supination of a foot is not to be desired. However, a foot in moderate supination is a strong foot, and will not give, like pronation, constantly increasing disability.

Figure 15, Case 5, and Figure 16, Case 2, both show old fractures of the tarsal bones, compound, comminuted, involving the ankle



Fig. 15 (Skidmore, Lester)
Osteomyelitis with preventable deformity. Old F. C. C. tibia, involving ankle joint, now site of osteomyelitis and ankylosis of tibio-astragaloid joint. The deformity consists in plantar flexion at mid-tarsal joint.

joint, which have resulted in ankylosis of the ankle joint in good position. Note the forefoot has been disregarded and there is present a plantar-flexion deformity at the mid-tarsal joint in the one case, and an adduction deformity at the mid-tarsal joint in the other case.

In conclusion, let us bear in mind the various deformities which are likely to occur in the various localities, and use every means at our disposal, as modern physicians, to accomplish their prevention.

It has not been my intention in this discussion to even attempt to exhaust the subject of deformities following injuries to the extremities, but, if possible, to stimulate more interest in their prevention.

Before the advent of the X-ray a surgeon might have had more excuse for his bad results. He, at least, did his best, and he



Fig. 16 (Kerless, Percy)
Preventable deformity (adduction). Osteomyelitis following compound comminuted fracture tarsal bones

and his patient were satisfied with poor function and even deformity in many instances, because they felt that they had secured the best result in that particular type of injury which was possible. However, now we are living in a different age—the X-ray is here, and the experience of the world war is ours —and we, as a profession, must do something to reduce the deformities which are preventable and which are such a handicap to the efficiency of the individual injured, and such a poor advertisement of our skill as surgeons. One of our prominent surgeons has said that "the responsibility of the physician or surgeon who assumes the care of a fracture cannot be overestimated or overstated. There is no one condition in the whole field of medicine or surgery that involves so much responsibility on the part of the physician or surgeon in charge." This is equally true with those injuries which involve, either directly or indirectly, the various joints. The physician should feel his responsibility, both to his conscience and to his patient. His conscience will always hold him to account, and his patient might do so in the form of a suit for damages.

The patient's value to his family, the community, his employer and himself are affected and vitally dependent on our willingness as physicians to keep constantly in mind, when treating injuries of the extremities, the thought—prevent deformity. That phrase is an essential thought, and it, together with a realization of our responsibility in such cases, and the cultivation within ourselves of an intense dissatisfaction with the all too frequent poor results of the past, will usually lead to good function, or perhaps, in some cases, to inevitably impaired function, but in a position which will afford the least disability.

PROPAGANDA FOR REFORM.

Yeast Foam Tablets. — Shorn of verbiage, "Yeast Foam Tablets" are claimed to be dried yeast in the form of tablets. They are put up in typical "patent medicine" style. The advertising for these tablets would lead the public to believe that it is in imminent danger of suffering from an inadequate supply of vitamin B. Though the Yeast Foam propaganda is plainly addressed to the public, specimen packages have been sent to physicians. Thus, the profession is given once more the opportunity to act as an unpaid peddler. (*Jour. A. M. A.*, April 8, 1922, p. 1074.)

Queen of Antiseptics.—This preparation is marketed by a person in Aurora, Ill., calling herself "Mme. Leonard." It is claimed to be "A Perfect Vaginal Germ Destroying Powder and Applicator." The A. M. A. Chemical Laboratory reports that the preparation is composed essentially of boric acid, 97 per cent, and ammoniated mercury, 3 per cent. (*Jour. A. M. A.*, April 8, 1922, p. 1072.)

DIAGNOSIS OF CHRONIC CHOLECYSTITIS.*

R. R. Sullivan, M. D.,
Lakeland, Fla.

While chronic cholecystitis is usually found in middle life, careful history taking will bring out history of one or more attacks in early life. It usually runs an indefinite course of about twenty years before onset of various complications. The only hope for cure of patient lies in a diagnosis made from symptoms of cholecystitis instead of those laid out before us as symptoms of complications.

We must not forget the fact that chronic cholecystitis is a very prevalent disease. In a series of 80,000 post mortems, 6 per cent had cholecystitis. Of this 6 per cent (4,800 cases), only 16 per cent had symptoms that referred directly to gall bladder. With these facts in mind, it is evident that an early diagnosis is to be based upon careful history taking, laboratory aids and accurate correlation of all data obtained.

In studying an individual case, it is well to hold in mind that we are dealing with a middle age disease, more frequent in women, and especially those having given birth to several children; that cholecystitis is a hematogenous infection of wall of gall bladder, originating in some other organ of body, very often in the appendix; that we can have intense colic in noncalculous cholecystitis; that most "stomach troubles" are not in the stomach.

Four types of cholecystitis are commonly recognized:

Type 1.—Intense colics in region of gall bladder.

Type 2.—Atypical colics. No acute pain, but dull aching over gall bladder, with tenderness at border of ribs in front, radiating around right side to back, with nausea and fever.

Type 3.—Gastric group. Discomfort after meals, belching, headaches, simulating gastric and duodenal ulcers.

Type 4.—Biliary-gastric group. Having biliary colic along with recurring gastric symptoms.

Type 1, with acute colic is readily recognized. When accompanied with an elongated Riedel lobe of liver it may be confused with a colic of septic floating kidney. Appendicitis in an abnormally placed appendix may produce symptoms that are confusing until carefully studied.

Type 2 must be differentiated from lesions of stomach, duodenum, pancreas, coecum, appendicitis, angina pectoris and abdominal aortitis. A careful history taking is first essential. Can often find history of an acute infection of gall bladder in early life. A middle-aged patient, especially a multiparous mother, are points to a positive diagnosis. Will get a history of repeated attacks of indigestion, dull aching over gall bladder, backache, headaches and bilious attacks with fever, all of which are usually relieved by vomiting and brisk purge. May or may not find tenderness over gall bladder in front, depending upon whether the examining finger can touch the gall bladder. Epigastric distress is produced by pressure over gall bladder. Tender spots will be found in right intercostal spaces on level with gall bladder in axillary, scapular lines, and near spine. While X-ray may show outlines of an infected gall bladder and distortions of adjacent structures, their chief aid is found in ruling out lesions of other organs. While hypoacidity of stomach is usually found, may have hyperacidity. The examination of bile segregated from duodenum, gall bladder and liver ducts, after the Metzler technique, is a valuable aid.

Without history of repeated attacks, when pressure over gall bladder fails to radiate an epigastric distress, and when tender spots are absent in right intercostal spaces on level with gall bladder, diagnosis of cholecystitis is not justifiable.

*Read before the Polk County Medical Society, at Lakeland, April 11, 1922.

In chronic appendicitis will expect to find history of previous acute attacks; do not have the headaches of cholecystitis; pressure over appendix will reproduce the epigastric distress; tender intercostal points will be absent.

In atonic lesions of coecum, will have absence of tender intercostal points; will be able at times to palpate the boggy coecum and make a positive diagnosis in X-ray laboratory.

Chronic pancreatitis, while regarded as secondary to and a complication of cholecystitis, is recognized chiefly by process of elimination.

In angina pectoris and abdominal aortitis, we often find symptoms in region of gall bladder that simulate Type 2 of cholecystitis. Differential diagnosis can readily be made by careful history taking and making use of laboratory aids.

Type 3. In the gastric group we have a discomfort after meals, often followed by a headache, with all symptoms relieved by vomiting. Have gastric symptoms without symptoms pointing directly to gall bladder. Ninety-two per cent of patients with cholecystitis have gastric symptoms. We get a history of long duration, with temporary relief under treatment for biliousness, dyspepsia, etc., only to recur over and over again.

Have here to differentiate gastric and duodenal ulcer and chronic appendicitis.

Placing proper value on history found, and finding that palpating gall bladder reproduces gastric distress; finding one or more tender right intercostal spots on level of gall bladder; finding infected bile segregated from duodenum after the Metzler technique; finding this evidence along with a negative X-ray report on stomach and duodenum, would eliminate ulcer.

In chronic appendicits, would expect history of one or more acute attacks. Headaches are usually absent; the epigastric distress is reproduced by pressure over appendix, but must not forget fact that cholecystitis and chronic appendicitis may co-exist with the appendicitis as the focal infection. X-ray may show adhesions in region of appendix. Have absence of above signs and symptoms in cholecystitis.

Type 4 (biliary gastric type), where we have a combination of Types 1 and 3; having biliary colic with recurring gastric symptoms. Differential diagnosis will be made by same method of elimination as used in Types 1 and 3.

As a summary, chronic cholecystitis must be regarded as a very prevalent disease of about twenty years' duration; a hematogenous infection coming from some focal infection; that in only 16 per cent do we have symptoms that point directly to gall bladder.

A recent stomach and gall bladder upset is not cholecystitis; must have recurrences over long period of time to incriminate gall bladder. A carefully taken, recorded history is first essential in making diagnosis by process of elimination.

Through their nerve supply, the coecum, common duct of gall bladder, appendix and pyloris are closely associated. A diseased condition in any one may masquerade as a lesion of either of the other two.

The only hope for cure lies in a comparatively early diagnosis, one made from symptoms of cholecystitis instead of from those of the numerous complications such as jaundice of common duct obstructions, septic gall bladder, cancer of gall bladder, distortion of adjacent organs by adhesions, pancretitis, etc. Allowing a patient to drift to old age with such symptoms is on a par with waiting for the cacexia of cancer in order to make diagnosis of malignant disease.

PRELIMINARY PROGRAM

Of the Forty-ninth Annual Meeting of The Florida Medical Association

To be Held at Havana, Cuba, June 27-28, 1922.

TUESDAY, JUNE 27TH, 10 A. M.

Call to order by the President, S. R. Mallory Kennedy, M. D., Pensacola.

Address of Welcome to the Association in behalf of the Medical Profession of Cuba—

Response to Address of Welcome—Joseph N. Fogarty, M. D., St. Augustine.

Reports of Officers of the Association.

Adjournment.

2 P. M.—Scientific Assembly.

Gerry R. Holden, M. D., F. A. C. S., *Chairman.*

The Carbohydrate Diathesis, J. C. Yarbrough, M. D., Columbia, Ala., invited guest of the Association.

Some Observations on Local Anesthesia, John E. Boyd, M. D., Jacksonville. Discussion opened by R. B. McIvor, M. D.

Bile Tract Infection, Sheldon Stringer, M. D., Tampa.

Some Observations of Acute Infectious Jaundice, T. M. Rivers, M. D., Kissimmee.

Suppurative Arthritis From Focal Infection, Edmund J. Melville, M. D., St. Petersburg.

Optic Neuritis Resulting From Hyperplastic Ethmoiditis and Sphenoiditis, Shaylor Richardson, M. D., Jacksonville.

The Eye and the General Practitioner, Alice R. Miller, M. D., West Palm Beach.

The Care of the Eyes, E. R. Tuttle, M. D., Miami.

Nasal Obstruction With Special Reference to Adenoids, A. H. Freeman, M. D., Jacksonville.

Tonsilectomy: A Major Elective Operation, J. Brown Davis, M. D., Daytona.

The Function of the Tonsils and a Plea for More Conservative Treatment of Chronic Tonsilitis, M. P. DeBoe, M. D., Key West.

Adjournment.

5 P. M.—Meeting of the House of Delegates.

The President in the Chair.

JUNE 28TH.

9 A. M.—Scientific Assembly.

Gerry R. Holden, M. D., F. A. C. S., *Chairman.*

The Standard of Gynecology, John Dent Peabody, M. D., St. Petersburg.

Extra Uterine Pregnancy, Chas. Jennings, M. D., Jacksonville. Discussion opened by Gerry R. Holden, M. D.

Some Methods in Delivery of Occiput Posterior, C. W. Agars, M. D., Coconut Grove.

Sepsis vs. Asepsis During Parturition, J. C. Davis, M. D., Quincy.

Anoci-Association in Obstetrics, Clarence D. Rollins, M. D., Jacksonville. Discussion to be opened by Ralph N. Greene, M. D.

Results of Radium Treatment for Uterine Cancer, Gerry R. Holden, M. D., Jacksonville.

Bladder Symptoms of Women, L. J. Efird, M. D., Tampa.

Haematuria, F. B. Ennis, M. D., Jacksonville.

Pyelography (lantern slides), R. B. McIvor, M. D., Jacksonville. Discussion opened by Dr. L. W. Cunningham.

Urticaria, J. C. Nowling, M. D., Milton.

A Consideration of the Occurrence and Treatment of Creeping Eruption, J. L. Kirby-Smith, M. D., Jacksonville. Discussion opened by H. C. Dozier, Ocala.

Treatment of Arterial Hypertension, Ralph N. Greene, M. D., Jacksonville.

Arteriosclerosis, Harry L. Putnam, M. D., St. Petersburg.

Dynamics of Cardiac Action, W. A. Stanley, M. D., Lakeland.

Adjournment.

12 Noon.

Election of Officers.

The President in the Chair.

2 P. M.—Scientific Assembly.

Gerry R. Holden, M. D., F. A. C. S., *Chairman.*

Management of Children With Heart Disease, W. S. Coleman, M. D., Miami.

The Treatment of a Case of Tetanus, Stanley Erwin, M. D., Jacksonville.

Communicable Disease in Florida, George Dame, M. D., Jacksonville.

Paper A—The Hemolytic Action of Hookworm Venom.

Paper B—Factors of Longevity in the Semi-Tropics. G. M. Randall, M. D., Daytona.

Personal Experiences With Typhoid Fever, David Rose, M. D., Sebastian.

Unusual Deformity, Complicated With Colonic Fecal Impaction, E. W. Warren, M. D., Palatka.

The Aims of the Gastro-Enterologist, E. B. Milam, M. D., Jacksonville.

Granuloma Inguinale. Report of several cases with special reference to treatment of same with antimony and potassium tartrate intravenously, G. F. Oetjen, M. D., Jacksonville.

Complete Rest in the Treatment of Gonorrhea, Davis Forster, M. D., New Smyrna.

The Biochemical Treatment of Diseases, A. Leight Monroe, M. D., Miami.

Cremation, or the Proper Disposal of the Human Body, G. C. Kingsbury, M. D., Largo.

Wanted—Location or practice in town or city affording educational and religious advantages by a trained Eye, Ear, Nose and Throat Specialist, experienced in Clinical and College Work. G. Wissler, Frederick, Md.

The Journal of The Florida Medical Association

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THE HAVANA MEETING.

Owing to the fact that many of the details of arrangements for the Forty-ninth Annual Meeting of the Florida Medical Association have to be taken care of by correspondence, the preliminary program of the Havana meeting which appears elsewhere in THE JOURNAL is not as complete as we would like it to be. The officers of the Association are hard at work with all the little details, and by the time President S. R. Mallory Kennedy raps his gavel calling the Association to order at 10 o'clock the morning of June 27th everything will be set for what promises to be one of the most interesting meetings in the history of the Association. No side trips of the organization as a body have been arranged for, as it was deemed advisable for each individual to map out his own arrangements. Some will remain longer than others and a trip that would interest one would not appeal to another. It is expected that a get-together dinner will be pulled off the evening of the second day, June 28th.

All those intending making the trip by way of Jacksonville over the Florida East Coast Railway should advise Dr. Graham E. Henson, St. James Building, Jacksonville, so that suitable Pullman car arrangements can be made for the party. If a large number of members wait until they reach the Terminal depot in Jacksonville before making their reservations, considerable confusion and annoyance is bound to occur. Travel is heavy and the railroad officials cannot make suitable arrangements unless they are advised in sufficient time. This need not prevent the man who only finds out at the eleventh hour that he is able to go from attending the meeting, but we wish to impress on those who have made up their minds some time in advance to send in notice of their intentions. As stated in previous issues of THE JOURNAL, those traveling by the Tampa route should make their reservations direct with the Peninsular and Occidental Steamship Company, Port Tampa.

PROPAGANDA FOR REFORM.

Pulvane.—In a 12-page pamphlet sent out by the Pulvane Laboratories, Inc., Des Moines, Iowa, and purporting to deal with "The Therapy of Pulvane, an Advanced Method for the Treatment of Respiratory Diseases," we are told that Pulvane "was developed in a United States army general hospital by officers of the medical department." Pulvane is administered by inhalation, at the offices of the Pulvane Laboratories, Inc. Its "discoverer," it is declared, chanced on the method of "introducing into solution and volatilizing a certain germicide, extremely rare in its usage, because of its resistance, heretofore, to attempts to bend it to scientific will." This "rare" medicament is alpha naphthol. But since the discovery of this volatilizing method "three other ingredients of high therapeutic value have been added." It is stated that the "medical directors" will be glad to name every ingredient of Pulvane to any reputable member of the profession. Nothing is said about disclosing the amounts of the ingredients of Pulvane and hence the information offered is no more complete than that furnished for such patent medicines as Peruna. With regard to the claim that Pulvane was "developed in a United States army general hospital by officers of the medical department," Surgeon-General Ireland, of the United States army, announces that the medical department of the army had nothing whatever to do with the matter and that it thoroughly disapproves of the methods of the promoters of the concern. (*Jour. A. M. A.*, March 11, 1922, p. 750.)

NEW AND NONOFFICIAL REMEDIES.

Ammonium Ichthyolate - Meadows.—An aqueous solution, the important constituents of which are ammonium salts of indefinite, complex, organic acids, partaking of the nature of oxygenated bodies and sulphonates held in colloidal dispersion. It is derived from an oily distillate of a fossiliferous bitumen found in Texas. It is claimed that ammonium ichthyolate-Meadows has the therapeutic properties of ichthyol. (See New and Nonofficial Remedies, 1921, p. 344.) It is a redish-brown, viscous fluid, having a faint odor. It is soluble in water and miscible with glycerine and fatty vehicles. Meadows' Oil and Chemical Corporation, Durant, N. Y. (*Jour. A. M. A.*, April 1, 1922, p. 967.)

Quinidine.—Quinidina.—An alkaloid obtained from the bark of various species of cinchona. Quinidine acts upon the heart in such a manner as to bring about cessation of fibrillation of the auricles in a certain proportion of instances. It is used to restore the normal rhythm of the heart in cases of auricular fibrillation. The drug is not without unpleasant and even dangerous effects. Cases of sudden death from its use have been reported. Quinidine is generally administered as quinidine sulphate. Two-tenths gm. is given as a preliminary dose. If no untoward effects result, the drug is administered on the following day in doses of from 0.2 to 0.4 gm., from three to five times a day and continued for from one to three days.

Quinidine-P. W. R.—A brand of quinidine-N. N. R. Powers-Weightman-Rosengarten Co., Philadelphia.

Quinidine-N. Y. Q.—A brand of quinidine-N. N. R. New York Quinine and Chemical Works, New York.

Quinidine-M. C. W.—A brand of quinidine-N. N. R. Mallinckrodt Chemical Works, St. Louis.

Quinidine Sulphate.—Quinidine Sulphas.—The sulphate of quinidine. For actions, uses and dosage see under quinidine. It may be administered in the form of cachets, capsules, pills or tablets.

Quinidine Sulphate-P. W. R.—A brand of quinidine sulphate-N. N. Powers-Weightman-Rosengarten Co., Philadelphia.

Quinidine Sulphate-N. Y. Q.—A brand of quinidine-N. N. R. New York Quinine and Chemical Works, New York.

Quinidine Sulphate-M. C. W. — A brand of quinidine sulphate-N. N. R. Mallinckrodt Chemical Works, St. Louis. (*Jour. A. M. A.*, April 8, 1922, p. 1051.)

Benzocaine-Seydel.—A brand of benzocaine-N. N. R. (See New and Nonofficial Remedies, 1922, p. 39.) The Seydel Manufacturing Co., Jersey City, N. J.

Sterile Suspension Mercury Salicylate in Olive Oil 1 C. C.—Each c. c. contains 0.097 gm. (1½ grains) of mercuric salicylate. (See New and Nonofficial Remedies, 1922, p. 193.) Intra Products Co., Denver, Colo. (*Jour. A. M. A.*, April 29, 1922, p. 129.)

Ven Sterile Solution Mercury Benzoate 1 C. C.—Each c. c. contains mercuric benzoate, 0.02 gm. (1-3 grain). (See New and Nonofficial Remedies, 1922., p. 192.) Intra Products Co., Denver, Colo.

Ven Sterile Solution Procaine 1 C. C. —Each ampule contains 1 c. c. of a 1 per cent solution of procaine-N. N. R. (See New and Nonofficial Remedies, 1922, p. 35.) Intra Products Co., Denver, Colo. (*Jour. A. M. A.*, April 22, 1922, p. 1201.)

PUBLISHER'S NOTES

AN EMERGENCY REMEDY.

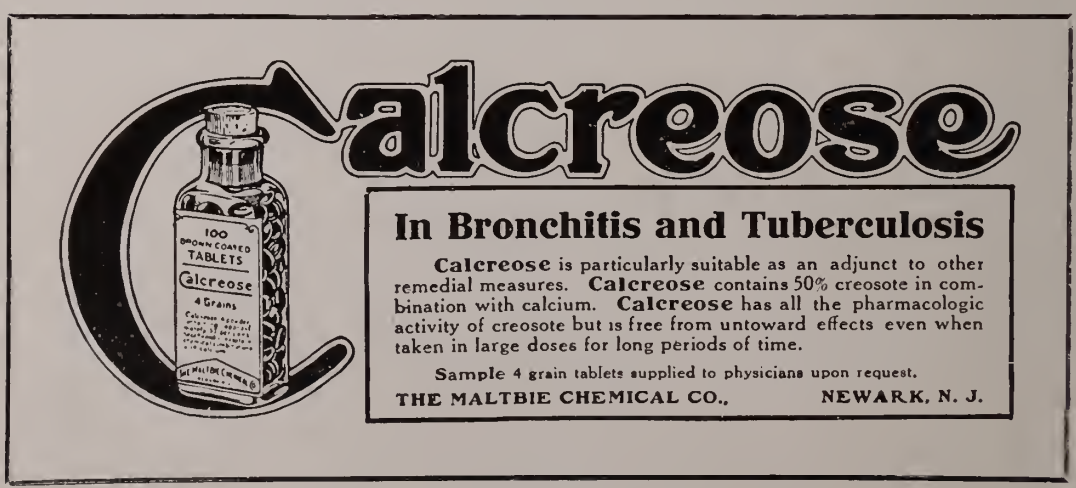
When the heart fails suddenly, as in shock, collapse, or anaphylaxis, the physician stands in need of a heart tonic that will act at once and that can be administered hypodermically. There is probably nothing in the whole materia medica that will serve him so well in such an emergency as Adrenalin (P. D. & Co.)

Of almost equal urgency is the condition of the asthmatic patient when the attack comes on, and the rapidity with which Adrenalin acts in these cases has made it indispensable throughout the medical world.

Persistent gastric hemorrhage makes the same sort of demand upon the physician, and here, too, Adrenalin, acting directly on the neurovascular tissues, stanches the bleeding almost instantly. In other forms of hemorrhage it is often useful also.

Adrenalin, we are told, is accurately standardized on animals, its effect upon the blood vessels being demonstrated by the administration of as small an amount as 1/6000 grain.

Adrenalin is a Parke-Davis product, having been introduced to the medical profession by that house in 1901.



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ORIGINAL ARTICLES

ROENTGEN TREATMENT OF TONSILS AND ADENOIDS.*

L. W. Cunningham, M. D.,
Jacksonville, Fla.

The treatment of tonsils and adenoids by radiation has been popularized in the last few years and now has definitely proven to be a valuable measure and one that secures excellent results.

We are able with radiation to accomplish several things:

1. Living tissue may be destroyed en masse.
2. Growth may be temporarily inhibited.
3. Rapidity of growth may be stimulated.
4. The manner of growth may be modified.

The roentgen treatment of tonsils and adenoids comes under the last form of effect of radiation as lymphoid tissue is especially susceptible to radiation. There is a similar structure of the tonsils and lymphatic glands. The early references to roentgen treatment of enlarged lymphatic glands indicate the value of the agent.

Pusey and Caldwell, in 1904, reviewed their results in roentgen treatment of tubercular glands and found: "The difficulties and unsatisfactory results of surgical procedures justify a thorough trial of X-rays. The prospect of success by use of X-rays is sufficiently good to warrant persistent trial before resorting to operation."

Kassabian, in 1907, collected from many competent workers evidence of the decided value of radiation in treatment of tubercular glands.

George C. Johnston, in 1911, in discussing the therapeutic efficiency of roentgen irrediation, says: "The treatment of tubercular cervical adenitis by means of the roentgen ray is eminently satisfactory and leaves little to be desired."

Knox, in 1918, referring to roentgen treatment of inflammatory and tubercular glands states that the results obtained are good compared to those of any other agent.

Witherbee, of New York, has popularized the method of roentgen treatment of tonsils and adenoids, and Van Allen, of Springfield, Mass., in an article recently, December, 1921, voices a retrospective note concerning treatment of tonsils by X-ray. He recalled that most all cases of cervical adenitis had chronically diseased tonsils and studied the case records of fifty patients. Eighty per cent of those investigated had never had another attack and the tonsil ceased to be an annoyance. They all agreed that the tonsils had been greatly reduced in size. Those who had tonsilitis after treatment were acute inflammations with no chronic irritation.

My attention was focused on the possibilities of treatment of the tonsils and adenoids after reading Dr. W. D. Witherbee's article in January, 1921. The treatment is simple, of course, it, however, requires a definite knowledge of the principles of X-ray dosage. About one-quarter of an erythema dose is given with filtered rays once every two weeks over each tonsil and adenoids, if the latter is indicated. These treatments can be repeated up to eight or twelve in resistant cases. It is not advisable to give treatment during the active stage of an acute infection, or immediately after applying a chemical irritant to the tonsil.

In Dr. Witherbee's work, careful check of bacteria found on tonsils was kept and it was noted that in a few weeks they disappeared. The tonsils became pale, shrunk up, and, in a sense, by shrinking turn the krypts inside out. It is particularly indicated in chronically-infected throats of singers where

*Read before the Duval County Medical Society, at Jacksonville, June, 1922.

the tonsils can be cleared up with minimum damage to muscular control of the throat. It is also indicated in cases associated with rheumatism, chorea, diabetes, chronic endocarditis, hemophilia or any condition contraindicating operation. There is also a field in the treatment of tonsils in carriers as of influenza and diphtheria. After tonsillectomy, often chronically infected lymphoid tissue remains in the throat of children and adults and is amenable to this measure.

The possibility of a burn is out of the question if careful technique is followed. Injury to glands as parotid, pituitary or others adjacent need not be considered as no damage has been done by roentgen treatment of tubercular glands. The dose for tubercular glands may involve 30 to 40 treatments, and tonsils rarely go over a dozen. Witherbee has treated 500 cases with no untoward effect. My personal observation is limited to a few cases, but the results have been gratifying. The first, K. F. Girl, age 12 years, October 19, 1921, referred by Dr. Love, had chronic infected tonsils with nephritis and endocarditis. At the time of the second treatment, the end of two weeks, the tonsils were much smaller and paler. Four treatments administered and tonsils appeared normal. General condition improved.

Second case, M. B. Girl, age 17 months, suffering with pyelitis and enlarged and chronically infected tonsils. January 31, 1922. At the end of fourth treatment, March 11, 1922, tonsils pale and small, and general condition good. Subsequent report states that child has gained weight, and health is very good.

Third case, D. L. Girl, age 7, April 22, 1922. Referred by Dr. B. H. Goodale, was a diphtheria carrier that had resisted other measures. After one treatment, successive negative cultures were secured.

Fourth case. Miss M. E. H., age 25. Had recurring colds every few weeks. Tonsils enlarged, December 2, 1921, treatment was started. Five treatments given during four months. Only one mild cold during that time. Definite benefit secured.

These few cases if taken by themselves would lead us to hope for much, but, when they are backed by the very satisfactory results secured by Witherbee in 500 cases, it leaves no doubt of the efficacy and permanency of the method.

A DISCUSSION OF EPILEPSY WITH REPORT OF CASES OF APPARENT CURE SURGICALLY.

L. C. Fischer, M. D.,
Atlanta, Ga.

In discussing epilepsy from any standpoint, I am reminded there is no condition we confront, in either medicine or surgery, where we are so utterly helpless and hopeless, as we are in so-called idiopathic epilepsy. Many men of many minds have written untold pages on the cause, effect, and cure without adding greatly to our knowledge. After the greatest care has been exercised in examination, treatment and general observation, we often resort to the time-worn remedy, bromides; in more recent years, to luminol. I blush to admit that we are practically helpless in the cure or relief of the majority of cases. By my preceptor, I was assured that little could be done, except the administration of bromides. He advised, however, to always resort to the alterative treatment, before the case was considered hopeless; which consisted of iodide of potash and mercury.

No effort will be made to discuss the etiology of epilepsy, its medical cure, nor indeed its cure from any standpoint. Only to report some conditions that have resulted in epilepsy, some diseased conditions causing epilepsy, or eplitoform convulsions from reflexes, which have been relieved surgically; and to make a plea for these unfortunates that a more careful examination be made of each individual case. That a thorough family and personal history be taken, especially the personal history of injury, or any unusual condition, or disease preceding or accom-

panying the attacks. It is only in this way that we may occasionally restore to society an asset, in the way of a cure, or rather relieved patient; instead of one who often becomes a charge upon the community.

Case 1.—A boy, six years of age, referred in 1906. Was well developed physically and mentally. General health good. Personal and family history negative. He had been having convulsions for three years, on an average of one a week. Physical examination revealed nothing except an enlargement under the prepuce, which was firmly bound down, with a pin hole opening for the escape of urine. His mother explained to me that when he emptied his bladder, there was much ballooning of the prepuce; that just before the convulsions, and up to the time he lost consciousness, he was constantly "pulling at himself." Under a general anesthetic, the foreskin was opened, showing a large deposit of smegma one-half inch thick, covering entirely the glans penis, with a small pin hole opening through the smegma, continuing the urethra. The removal of this left a much irritated area all over the glans penis, and especially back of the corona. Following the operation, he has never had another convulsion, and up to this time, sixteen years, has remained well.

Case 2.—S. G., male, fifteen years of age, family and personal history negative. Early in 1907 his right arm was amputated by the fan of a blowing machine, four inches below the shoulder. I, at that time, reamputated and closed the stump. Early in 1908 he began to have convulsions. A large neuroma was discovered in the end of the stump, and removed, after which he was relieved until in January, 1909, a recurrence of convulsions, and similar operation was done; at the same time the stump of the humerus was disarticulated. He still had convulsions. In March, 1910, he was operated upon in Baltimore, at Johns Hopkins, a decompression was done, removing the bone. In April, 1910, he returned to Atlanta, still having convulsions. I reopened the scalp and placed a celluloid plate over the opening, at the same time dissecting the brachial plexus as near back to the transverse processes as possible. Following that he was relieved, and for five years did not have convulsions; has recently died of pneumonia.

Case 3.—Mrs. R. J. S., Atlanta, Ga., first consulted me in 1912. She was the mother of one child, father and mother living, and in good health. She was the only child of the family, always well. Menstruated early, at the age of twelve, regular, twenty-eight day type. Married at eighteen, first pregnancy twelve months after marriage. At the birth of her child there was a severe perineal laceration, also a bilateral laceration of the cervix. Primary repairs were done, and when healed, the cervical canal was completely closed. All examinations were negative except the pelvis. The perineal floor was very tense, composed of white fibrous tissue. The uterus was large, simulating a four months' pregnancy, and could be felt well above the os pubis. Both ovaries cystic, the size of a large orange. She was at the time, and had been since two months after the birth of her child, mentally unbalanced; and having convulsions, an average of one every three or four days. At operation, the cervix was dilated and amputated; removing practically a quart of retained menstrual flow, black, thick as tar, and free from odor. The perineum was repaired after dissecting free all scar tissue. Double salpingo-oophorectomy was done, both round and broad ligaments shortened. She made an uneventful recovery, except her mental condition. In three weeks she was transferred to a sanatorium for the treatment of mental deficients, returned to her home in six months afterwards in good physical and mental condition. Her mind has remained clear up to this time. She never had a convulsion after operation.

Case 4.—A girl, twelve years of age, unusually well developed, referred in January, 1913. Personal and family history negative. She consulted me at her third menstrual

period. Her first convulsion was three months before menstruation occurred, and six months before the first consultation. The convulsion was described as being epileptic in type, occurring once a week. Her mother explained that at the time, or just before the convulsions, she placed her hand over the vulva, and that she often found her "scratching or rubbing herself." All physical findings were negative, except pelvic. Under chloroform examination was made, finding the clitoris much elongated, with a hood covering it and adherent. Uterus and ovaries infantile. While she was anesthetized, I did what amounted to a circumcision; dissecting freely so that the glans clitoris was well exposed. She has remained well since, had no more convulsions and during the last year has married.

Case 5.—Mr. J. Y. S., Cordele, Ga. Referred in February, 1914. Family and personal history negative. In the summer of 1913, while loading hay, he had a controversy with a negro. Was struck over the head with the handle of a pitchfork, producing a fracture of the skull, to the left of the sagital suture, at its junction with the coronal suture. There was no paralysis, but he was unable to speak, and began in the early fall to have epileptic convulsions, an average of one a week. Upon examination, the depression was located, and operation advised. This done early in March, removing the depressed bone, also opening the dura. There was no apparent injury to the brain tissue. A celluloid plate was left in. He never had a convulsion following operation. I have been informed his speech is fully restored.

Case 6.—Mr. C. A., a farmer, seen in April, 1914. A well-developed man, twenty-eight years of age. Personal and family history negative. One year before he was kicked by a mule, over the middle of the right tibia, anterior surface, the bone not fractured. An osteoma formed, three inches in length, protruding anteriorly two inches. The patient explained that just preceding a convulsion, usually a day, he would suffer pain in the entire right lower extremity, and especially at the site of the growth. At operation the osteoma was removed, curetting thoroughly the base of its attachment to the tibia. He had one convulsion following the operation, but has remained well since, with no recurrence of growth.

Case 7.—Mr. A., referred in February, 1919. Personal and family history negative. In the fall of 1918, he was kicked by a mule, fracturing the right side of his forehead over the frontal bone, two inches from the median line, two and a half inches above the eye brow, producing a depression one and a half inches in diameter, in each direction. He had convulsions immediately afterwards, and on an average of one every two weeks since injury. A trephine was done, removing the depressed bone, and placing over the opening a celluloid plate. He had one convulsion one month after operation; but since has been entirely relieved. From the time of the accident until he was operated upon, he suffered with intense headaches, almost continuous, to such an extent that he had to be given quantities of opium to relieve the pain. Following the operation his relief was so complete that further anodynes were not needed.

Case 8.—Miss T. M., age seventeen. Admitted September 28, 1918. She was unusually well-developed physically. Personal and family history negative, except indirect information that her father has had some kind of spells most of his life, but no one was positive that they were epilepsy. Menstruated first at fifteen, regular, twenty-eight day type; duration, five to six days. Three months before consulting me, during her menstrual period, she had her first convulsion, which occurred at six a. m. of the first day. Since that time she has had one or two each menstrual period. Thorough examinations were made, blood and spinal fluids negative to Wassermann reaction. Heart, lungs, and kidneys negative. Upon pelvic examination found the hymen intact, clitoris normal, the uterus sharply antiflexed, both

ovaries, tubes and uterus infantile. A D. and C. was done on September 30, 1918, and stem pessary left in. It was worn ninety days, during this time she menstruated regularly but did not have convulsions. After removal of pessary she again had convulsions at her next menstrual period, and each successive period, until March, 1919, when a stem pessary was reinserted and worn sixty days. She was entirely relieved at her next menstrual period and had no convulsions. Upon removing it she again had convulsions, and was referred by me to a nerve specialist of Atlanta for examination and treatment. His diagnosis was idiopathic epilepsy. She was not relieved by treatment. In January, 1920, uterus was dilated and she again wore a stem pessary. Following this and preceding the last D. and C. for six months, she had been given corpus luteum tablets, three grains before meals and at bed time, and for thirty days previous to January, 1920, was given an ampoule of corpus luteum subcutaneously daily. On March 19, 1920, she was again admitted, having had one convulsion every hour for the last forty-eight. She was at this time wearing the stem pessary, but it was removed before admission. She was given two ampoules of corpus luteum subcutaneously every three hours for forty-eight. At which time she had reacted, did not have another convulsion after admission. Uterus was again dilated March 23rd, and radium introduced to produce a temporary manopause, the result was good, as she did not have another period, or any symptoms of menstruation until November following, she was then slightly nervous but had no convulsions. Radium was again used in December, 1920. Following this one period appeared without convulsions. She did not have another period until July 1, 1921, nineteen months since her last convulsion, at this time she had another convulsion and her menstrual period reappeared. She was then treated with X-ray, there has been no appearance of menstruation or convulsions since, and she has remained well.

Case 9.—Mr. R., a well-developed young man of eighteen. Personal and family history negative. Eight years before his scalp was opened by an Atlanta surgeon. This occasioned by an injury from a fall, striking on the left side of his head, directly over the parietal eminence, near the junction of the parietal and frontal bones. Following this injury he had convulsions for a year before the first operation, when the skull was not opened, as a fracture, or the result of one, could not be demonstrated. He did not, however, have a convulsion for some months afterwards. For the last seven years he has had a slight convulsion each week, gradually growing more frequent, with an occasional severe one. Physical examination negative, except a scar in the scalp. His facial expression dull, mentality low. Body covered with a bromide rash. Several of the light convulsions were observed in my office and sanatorium. There were incoordinate movements, especially of the right arm, leg and side of the face. He did not fall. His bladder was often emptied involuntarily. Consciousness would return in a few moments. He was having as many as one of these light attacks in each waking hour. Operation April 9, 1920, removing an area of bone two and a half by two inches, showing evidence of old fracture, directly over the arm and leg center on the left side. A careful examination was made for tumors or fluid, none found. The dura was left open, cut in stellate form, a celluloid plate was fastened over the opening. Since operation he has not had the slightest discomfort.

Case 10.—Miss F. N. B., age twenty-nine. Admitted August 20, 1920, suffering from convulsions and a low state of mentality. Personal and family history negative. Menstruated first at the age of fourteen, never regular, accompanied by much pain. At each menstrual period she had from one to three convulsions, none between periods. All physical examinations negative, except pelvic organs; hymen intact, clitoris normal, both ovaries cystic, three to five inches in dia-

meter. The uterus infantile and retroverted. Operation August 22, 1920, removed her appendix, both tubes and ovaries, shortened both broad and round ligaments. Pieces of ovarian tissue, the best that could be saved, were transplanted in the right rectus sheath. Since operation she has not had a convulsion, and has not suffered the nervous phenomena incident to removal of ovaries, but there is little, if any, improvement in her mental condition.

Case 11.—Mr. L. H., admitted January 10, 1921. Family and personal history negative. During the latter part of 1919 was struck over the right side of his forehead with a hammer, causing a depression two inches in diameter. Following the injury, he had convulsions, an average of one a week. In January, 1920, was operated upon in Atlanta, the surgeon removing the depressed bone on the right side of his forehead, which was two inches to the right of the median line, two and one-half inches above the eyebrow. At this time, the dura was not opened, and no plate was left in. For thirty days following this operation he was relieved, after that time he began to have convulsions, an average of one every two weeks. He was admitted January 11, 1921. Upon examination we found, at site of old operation, there was a pulsating depression, two inches in diameter; the skin firmly adherent to the dura. On January 13, 1921, he was operated, dissecting the scalp free from the dura. A celluloid plate, three inches in diameter, was fastened over opening. Previous to his first operation and after thirty days following, he suffered with intense headaches, much worse just preceding a convulsion. Following the second operation he has been completely relieved. While I realize this is an early date to report a case, it does go to show a temporary, if not a permanent relief.

While the placing of any foreign material, as a plate, may not be necessary, it has in my work been a great satisfaction, and in this particular case is evidently very beneficial, as patient had convulsions and headaches thirty days after primary operation, and after placing the plate, has been entirely relieved. In this case, it is hoped the prevention of adhesions to the dura will result in permanent relief.

Case 12.—Mr. L. T. J. Admitted March 24, 1921, suffering with intense pains in the back of head and neck and convulsions during the night, never having had but one convulsion in the day. Family history negative. Thirteen years ago, was in a fight, when his opponent using the handle of a knife and a glass lamp, produced severe bruises and a possible fracture over the right perietal eminence. Two years following this, he began to suffer severe headaches and to have an occasional convulsion, these having increased up to the present. All reflexes normal. At operation, a section of bone directly over the site of injury, one and one-half by two inches, was removed. Upon exposing the dura, it was found to contain a great number of white fibrous bands, with a cicatrix an inch in diameter. Cutting through this we exposed a hematoma two inches in diameter, of old organized blood, but not a distinct tumor. The dura was not closed, a celluloid plate placed over the opening. This case too, while too recent to report as a cure, the patient has been entirely relieved since operation, and is in apparently good health.

Unless some definite cause for convulsions can be demonstrated, an operation is often meddlesome surgery. Of the many cases of epilepsy seen, these are the only ones where I have felt justified in operating. These, however few, have encouraged me in careful investigation, and examination of each case presented.

TRACHOMA AND CONJUNCTIVAL FOLLICULOSIS.*

ALPHEUS K. WILSON, M. D.,
Jacksonville, Fla.

Physicians have been combating trachoma since the beginning of the last century, at which time it was noticed to be endemic among the European armies. It was called Egyptiaca ophthalmia, as it was believed to have been brought home by Napoleon's troops from Egypt, where most of his 32,000 men were attacked by a violent ophthalmia. Trachoma had, however, existed in Europe since antiquity, as was shown by subsequent historical researches.

Trachoma, as it prevails in this country, is a chronic disease of the conjunctiva, characterized by a new formation of lymphoid-tissue, and always results in scar-tissue.

Trachoma and follicular-conjunctivitis are very similar, and often times are hard to differentiate. The latter is only an enlargement of the lymph follicles, due to the presence of a chemical irritant reaching them, either by direct contact through the epithelium, or by way of the blood-stream, while in trachoma there is an invasion of the subepithelial layer itself, by micro-organisms, which in turn are surrounded by a new formation of lymphoid-tissue.

Granulations and lymphoid formations are necessary in trachoma pathology, as they are produced by the reaction of this tissue, against the trachoma virus. Trachoma is, therefore, a type of chronic granular inflammation.

The conjunctiva in folliculosis is not perceptibly thickened, while in trachoma it is more or less so, even in the beginning. The conjunctiva is finally overcrowded in itself and is irregularly marked by cracks and crevices formed by the inverted epithelium.

In examining an eyelid for trachoma, oblique illumination should be used, which consists in the concentration of light upon a certain portion of conjunctiva by means of a strong convex lens and then using a loupe or magnifying glass to study this special field. By this simple method a very important sign in the early diagnosis of trachoma is brought out, that is, if it is possible, to trace the blood vessels uninterruptedly from the ciliary border to the culdesac, there is no conjunctival hypertrophy, a very essential feature of differentiating from folliculosis.

Foster states if any vessels are observed running in a vertical or approximately vertical direction across the culdesac, it is safe to exclude trachoma. In this disease the normal blood vessels disappear in this locality and only adventitious ones are present, which take a horizontal or oblique direction.

The follicles in folliculosis are pale, distinct and separate, arranged in rows parallel to the lid margin; they seem to puff up the conjunctival tissue. They are more numerous in the fornices, which is characteristic. The conjunctival vascular distribution can easily be traced by oblique illumination in and about the follicles. In trachoma, the follicles are indistinct, confluent, irregularly placed, and appear within the conjunctiva. On everting the lid in folliculosis, you see a white or pink area, which shades out evenly, while in trachoma, the conjunctiva appears blotched and white streaks run in all directions.

The course of folliculosis is fairly regular. It usually lasts from infancy or early childhood to puberty, during which time the conjunctiva is more liable to various infections, which often become chronic. This is probably due to two causes: First, the unevenness of the surface, which forms a lodging place for the germs and prevents the natural cleansing agents from carrying them away; second, underlying adenoid tissue, which is always of a low resistance. The follicles may disappear by improving environment, correcting any systemic condition and attention to nose and throat abnormalities. Follicles finally disappear, with no traces of scar-tissue.

*Read before the Forty-eighth Annual Meeting of The Florida Medical Association, at Pensacola, May 10-11, 1921.

Trachoma, on the other hand, has acute exacerbations every few weeks or months. The subepithelial tissue is gradually crowded with a new formation of lymphoid tissue, converting the palpebral conjunctiva into an indurated, thick, deep-red, velvety-looking tissue. All blood vessels are obscured. Degeneration, necrosis and absorption soon set in, the process finally resulting in scar-tissue, which is the only certain sign of trachoma. The trachoma follicles have a tendency to make their way to the surface, degenerate and expel their contents. In the majority of cases, the cornea is also involved during the course of the disease, with very similar deposits of lymphoid tissue in the subepithelial layer. This film is richly supplied with blood vessels. The cornea is infiltrated and vision severely impaired. Ulcers often appear, leaving an opaque scar-tissue.

The above activity may continue for months or years, until the hyperplasia has given way to cicatricial tissue with its various deformities of the lids and permanent damage and destruction of the Meibomian and Kraus glands. The course is considerably shortened by treatment.

Folliculosis, uncomplicated, gives no symptoms, while in trachoma there is photophobia, lacrimation, pain and purulent exudate during the acute exacerbation periods; while in the quiescent stage there often are some or all of these symptoms present, but to a lesser degree.

Folliculosis is not a communicable affection; it is often found in children of the lymphatic type, as those with hypertrophied tonsils and excessive adenoids, and those living in badly ventilated apartments and exposed to dust, smoke, etc. The constant instillation of atropin solution into an eye will sometimes produce folliculosis. Trachoma is contagious by the transference of secretions from a diseased eye to one not infected. Some ophthalmologists claim that the contagion is limited to a moist secretion. A healthy eye, both of the human and ape, has been experimentally infected by trachoma virus. Recent investigations by F. B. Eaton, in the endemic area of Kentucky, show that domestic animals are not infected as was reported a few years ago, and therefore are not a source of contagion. Trachoma virus has a low vitality and inability to withstand drying at 32 degrees C. (89¾ degrees F.) for one hour.

It would seem in many cases that trachoma is either not a highly contagious disease, or certain individuals have an immunity. This latter has never been proven. We often see one of a family with it for years without any other member being affected. This happens even among the poor, who are ignorant of the contagiousness and who use the same towels and wash basins.

McWalter writes on his experiences with 873 eye cases (the bulk of which were trachoma) among Turkish prisoners in the desert. He estimates that certainly over 90 per cent were preventable. Among the Turks, as among most Orientals, eye affections are undoubtedly spread by their habit of covering their faces with blankets and towels while sleeping.

Eason says, from his recent observations in the British army in Egypt, where 3,000 eye diseases have occurred during two and one-half years, that it is evident that the epidemic among Napoleon's troops in Egypt, in 1799-1801, was not trachoma as was once supposed, but an acute purulent ophthalmia such as is seasonable there every year from July to December, and is caused by gonococci, Koch-Weeks and other diplococci. He concludes that the infectivity of trachoma among soldiers is almost negligible. This, to a large extent, is due to modern standards of sanitation.

Folliculosis requires no local treatment other than curing any associated conjunctival infection which may be present. On the other hand, the importance of thorough treatment of trachoma is plainly imperative when one recognizes the fact that it is not a harmless diseases, but, on the contrary, a very serious one; that is, when a person is

once affected, his earning capacity and social life are greatly depreciated, if not lost. So, treatment by lessening the contagiousness, shortening the course, reducing the symptoms and probably by rendering the sequelae less disastrous, is urgently indicated. Furthermore, the patient cannot by an operation and a few drops of medicine be restored in five or ten days to a normal state, even if taken in the earliest stage, but he is still a source of infection until every trace of the disease has been eradicated, which takes months of persistent and painful treatment.

The treatment of trachoma is:

1st. Prophylactic, avoiding all contact, direct and indirect, with a person infected.

2nd. Curative by medicine, or surgery with medicine.

The action of the various drugs used are phagocytic, astringent and antiseptic. Copper sulphate, silver nitrate and zinc probably head the list, and are well tried-out and efficient remedies. Where possible, it is better to use the combined method of surgery and medicine, as the period of treatment is much shortened.

Surgery not only aids the trachoma follicles to empty their contents but causes a great phagocytic exudate into the pathological tissues. The surgical procedures are many. Expression, scarification, rolling and negative pressure are the most common, and are often combined. One or more operations may be necessary. This procedure must be followed up with several weeks or months of the medical treatment as mentioned above.

Scarification was used by the ancients for trachoma, and today, when used in connection with expression, is the most reliable method.

These mechanical means do not produce an immediate or radical cure of trachoma, since it is certain that the small granulations or follicles, which are in the process of forming, cannot be removed with the larger ones, and these finally develop. The treatment must be kept up until hypertrophy of the conjunctiva has entirely disappeared.

Relapses are to be looked for and are so common that it often appears that trachoma is not cured until the whole conjunctiva is replaced by scar-tissue.

Entropium and ectropium are met by the various operations. Dissection of the tarsus for entropium is most satisfactory.

In conclusion, I have endeavored to show the following points:

1st. Trachoma is distinguished pathologically from folliculosis by a true hypertrophy of the conjunctiva and by changes in the blood vessels; that is, arranged horizontally in the culdesac and not traceable over the tarsus. The essential diagnostic feature of folliculosis is that the follicles are more numerous in fornices and the blood vessels not altered.

2nd. Trachoma has a true pathology; folliculosis, no pathology.

3rd. Trachoma progresses to final stage of scar-tissue; folliculosis, benign.

4th. Trachoma virus has a comparatively low vitality.

5th. Trachoma is communicable by interhuman contact, direct and indirect, due to unsanitary habits and social customs; folliculosis, not communicable.

6th. Treatment: Very essential in trachoma, prophylactic and curative; in folliculosis, not indicated.

7th. For these reasons, I am firmly convinced that the cases among the school children of Florida which have come to my attention with a previous diagnosis of trachoma, are in truth nothing more than conjunctival folliculosis, and, if operated upon, scar-tissue will be produced which, in after years when the hardening of the tissues of senility occurs, may result in disastrous deformities of the lids, changes in the cornea or loss of vision.

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NEW HOOKWORM TREATMENT SUCCESSFUL IN BIG TESTS.

Evidence that is gradually being accumulated by medical men in various parts of the world provides a good basis for the belief that carbon tetrachloride, a cheap and common chemical, is a cure for hookworm in human beings. Recent reports from the Fiji Islands and Ceylon covering thousands of cases show practically 100 per cent of successes.

The discovery of the efficacy of the drug in removing these parasites was made by Dr. Maurice C. Hall of the United States Department of Agriculture, who tested it on dogs and even tried out its effects on himself. His results immediately stimulated medical men in many countries to start investigations, and favorable reports are now being received by the department.

In the Bogambra prison at Kandy, Ceylon, a country where hookworm is common, this carbon compound was tried on 14 persons with marked success. Among them was a condemned criminal who offered himself as a subject for a thorough test. He was given a maximum dose of 10 cubic centimeters of the drug, which removed 55 hookworms. Twenty-two days later he was executed. A post-mortem examination showed that all these parasites had been removed. The other convicts apparently were completely freed of the parasites by much smaller doses. No effects other than slight dizziness and a sensation of weight in the stomach were noticed in the case of those receiving less than 10 cubic centimeters of the drug. The prisoner receiving 10 cubic centimeters experienced some nausea and drowsiness.

Twelve thousand natives of the Fiji Islands, according to a telegraphic report recently received in London, have been successfully treated by the same method, a single dose removing all these parasites from 90 per cent of the patients and at least 98 per cent of them from all persons treated. This is the most extensive test of the chemical yet made on human beings.

The almost universal success thus far gives reason to believe that carbon tetrachloride is far superior to the old remedies, thymol and oil of chenopodium. The second of these has given rise to a number of fatalities, probably because of the variable composition of different samples, and thymol has caused the deaths of some patients. Thus far carbon tetrachloride, which is usually given in capsules, has produced no ill effects and does not appear seriously to inconvenience the patient.

The tests made on human beings in various countries, including the large number in Fiji, bear out those made by Dr. Hall. He found that a very small dose, 0.3 of a cubic centimeter to a kilogram of live weight, amounting to less than an ordinary teaspoonful for a 22-pound dog, was effective, but in one case a dog was given about 20 fluid ounces (nearly a half pint) without evidence of injury to the animal. The United States Public Health Service reports that relatively heavy doses given to monkeys produced no symptoms of poisoning and no noticeable change in any of the organs.

As the evidence piles up, it seems more and more probable that carbon tetrachloride, which is commonly used as a clothes cleaner, will prove to be a cheap, agreeable and effective treatment for a parasite that is destroying health and reducing human efficiency in millions of people in many parts of the world, including many thousands in our Southern States.

FLORIDA MEDICAL ASSOCIATION IN HAVANA.

As this number of THE JOURNAL comes off the press the Forty-ninth annual meeting of the Florida Medical Association will be in session in Havana, Cuba. Everything points to a well-attended and a successful program. The arrangements which had not been completed when the Preliminary Program was published last month have been perfected. Official proceedings of the sessions will appear in detail in the next issue of THE JOURNAL.

THINGS WE OUGHT TO KNOW.

F. J. WALTER, M. D.

That too many of us eat too much meat, especially after forty; also that much stress should be given our patients regarding well-balanced meals containing enough meat. In Friedenwald and Ruhrah's *Diet in Health and Disease,* we are told that Major Chas. E. Woodruff, Surgeon, U. S. A., expresses the following opinion: "All natives of the tropics (where civilization causes overpopulation) are in a condition of nitrogen starvation and need much more nitrogen than they can possibly get. The old standard that we should eat as the natives do, is most vicious. They do not eat meat because they can not get it. They crave it, need it, and eat it when they can. On account of the destructive effects of the concentrated tropical actinic rays on protoplasm, we need more nitrogen than at home. Please do not copy the old falsehood that we need less. It is also true that we need fat, as it furnishes energy better than the carbohydrates. It is eaten in preference to starches and sugars for this purpose by workers when they can afford it, but they take to starch (rice) because it is cheaper. It is incorrect to say that it overheats. It does not overheat us, and it is false to say that fat is not needed in the tropics."

In the same work Chittenden's experiments are quoted regarding the enormous practical value in showing that a low protein diet can be used over long periods of time without danger. Diets low in protein are of value in gout and gouty affections, in some skin diseases accompanying disorders of metabolism, in treating the ill-effects of habitual overeating and in arteriosclerosis, in fevers and some other affections. Brain workers and those leading sedentary lives will also doubtless do better on diets lower in protein than those usually taken.

We should remember that the average-sized man at moderate work requires daily

of protein 118 grams, of carbohydrates 500 grams, and of fats 56 grams. During growth the protein requirements are higher than when adult life has been reached. During pregnancy (unless nephritis is suspected or albumen is found) and lactation, and convalescing from wasting diseases, and in tuberculosis, we should prescribe the proteins. High protein diets are objectionable in those living sedentary lives, in arteriosclerosis and old age.

We all know that moderation in all things is the hardest lesson given the human race to learn. The race goes on eating and drinking, according to their appetites, which is helping wonderfully to support the medical profession. However, it is our duty to prevent disease, and in no way can this be accomplished better than by exposing the defects in our national dietary.

We ought to know more about practical dietetics and the actual preparation of food. Physicians should be good cooks. We should know what certain combinations mean and that good cooking is not cake-baking (the first thing the "would-be" cook usually cares to make), but rather the careful and detailed preparation of standard, nourishing foods. Diet must be generalized and individualized. The masses in America abuse their stomachs with too great a variety of foods, too many sweets and desserts, too much fried food and food prepared in any way to be served the easiest and quickest! The "help problem" and the housewife's extensive duties are too often reflected in the stomachs, the general health, the temper and temperament of the American people. Americans are consuming more cheap bakery food made from blanched flours than any other nation on earth.

We should know that if man is given the proper food at stated intervals, in right amounts, properly prepared, properly balanced, fresh, and suited to the habits, climate and conditions under which he lives, that his teeth should see him through.

Moderation in all things builds character, and no parent can afford to allow a child to gormandize on sweets.

Much attention today is rightly given to infant feeding. A great deal more will have to be given adult feeding.

We can only blame ourselves for the harvest we are sowing by the example we set, as physicians, in living and eating.

When we take a strong position, we are bound to arouse opposition, hence it requires firmness and patience to reform deeply rooted habits.

The writer has seen young people who, having been brought up on a diet consisting largely of citrus fruits, syrups and corn bread in Florida, wearing full sets of false teeth under twenty years of age.

Lorand, of Carlsbad, in *Health Through Rational Diet,* in a chapter devoted to "The Influences of Food Upon Man," states that many wild animals become remarkably tame when deprived of meat. Tame bears become unmanageable when fed upon meat. That many peace-loving people live upon a vegetable diet, giving the Chinese and Hindoos as examples. He says that it is owing to this fact that a small number of meat-eating Britishers and Dutchmen have mastered millions of the rice-eating Hindoos and Malays. He also rightly says that higher intelligence and the achievements of civilization play their parts.

Two things determine our worth as physicians: what we learn, and what use we make of it with and for our patients.

In dieting, we are often rich according to what we can do without, provided we do not know what is best in food.

A common difference between a good patient and a bad one is that the bad one's mistakes never teach him anything.

Lorand remarks that food exerts so great an influence upon man that even the size of his body is essentially affected thereby. He cites the Swedes and English as examples as having been fed during the growing period upon plenty of nitrogenous foods and balanced rations. Even in Africa a tribe, the Watussi, who are richly nourished, having great physical development, as against the dwarfs and Eskimos of low stature, who live on a one-sided meat diet. The organs which regulate the body growth are the thyroid gland, the sexual glands and the thymus. They influence the metabolism of lime and phosphorus, which are the main elements of which the bony structure of the body is composed. When these organs have degenerated, growth does not usually take place, and when there is defective development of the sexual glands, the well-known dwarf-like condition of cretins often exists. Children of wealthy people, having plenty of roast meats and other articles of food rich in nitrogenous substances, frequently grow very tall, while, on the other hand, the children of poor people often develop very slowly. This would explain the large numbers of tall persons in the aristocracy and among the well-to-do classes where riches have existed during generations. Children are made to grow more rapidly by generous feeding, there is no doubt. We have all seen the surprising development of backward children by giving the thyroid and other glandular extracts.

Most "indigestion," where there is not actual pathology such as chronic appendicitis, malignant disease, etc., can be greatly relieved, if not cured, by rational diet and living.

Canned food should be reserved for emergencies.

We are more or less products of our environment, and the faces of many people tell the character of the food that has been taken.

Many cooks are "food spoilers"! The annual waste from food-spoiling is inconceivable.

Short cuts in cookery make the druggist rich and the subject pale-faced.

Crackers are not a wholesome food unless made from whole wheat.

Coffee and tea should be taken without sugar and cream. The taste without should be so acquired, if these beverages are taken at all.

Alcohol should not be taken with meals, if taken at all.

Most sweet cakes lack the essential elements of a balanced food ration and should not be eaten other than occasionally.

The faces of a people will show the nature of that people as well as the nature of the nourishment provided for growth.

Vegetarians exist because some of us have been intemperate with meats. It is for the rest of us to become temperate with vegetables *and* meats, and demonstrate to them an abundance of energy and character.

A good cook will give much thought to the proper preparation of vegetables and the length of time they should be cooked.

The following is given as containing some practical points regarding foods considered desirable and undesirable:

DESIRABLE FOODS IN GENERAL.

Milk (delivered under modern conditions).
Ice cream.
Eggs, soft-boiled, poached.
Fish, oysters, clams, etc. (better not fried).

Cereals in general. (Wheat, oats, corn, in order named.)
Butter, olive oil and fats.
Honey.
Nuts.
Meats (according to kind of work, often once a day sufficient, moderation after forty).
Vegetables of all kinds (beans, peas, cabbage, etc.; too heavy for some people).
Fruits (generally good for some persons; better stewed).
Soups (usually desirable).
Sugar (very sparingly).
Bread (not too fresh, from a good flour, preferably whole wheat. French rolls, etc.).
Game and fowl.

UNDESIRABLE FOODS.

Pastry as usually made at cheap hotels and restaurants and as a regular daily food. Pastry made from blanched flours with much sugar.
Pies, all with undercrust. Same as pastry.
Dumplings (only exceptionally).
Hot breads in general.
Acid and greasy soups.
All fried foods (less desirable than baked, broiled or boiled; bacon better boiled).
Highly seasoned foods of all kinds.
Sugars in excess.
Flour gravies of all sorts.
Conglomerate mixtures.
Coffee and tea (for many persons).
Chocolate (for growing children).
All cold-storage food.

In general, we take too many mixtures at meals and we too often eat between meals. Many of us frequent the "soda fountain" intemperately. Neurotics should always avoid coffee and tea and oatmeal. Corn, beans and peas can be overcooked. Do not add cold water to vegetables and meats while cooking. Many modern "breakfast foods" are low in calories. French cooking is usually safe.

JACKSONVILLE CLINICS.

A surgical and medical clinic was conducted in Jacksonville by the various staffs and adjunct staffs of the various hospitals located in Jacksonville during the month. The clinic was originally suggested by the Duval County Medical Society and as carried out had the sanction and was under the auspices of this organization. Those members of the Jacksonville profession having charge of the arrangements worked hard for the success of this clinical demonstration. The attendance was most gratifying in view of the fact that this was the first attempt to arrange anything of the kind. A large amount of clinical material is always available in a city the size of Jacksonville. It is the present intention of the Duval County Medical Society to conduct a clinic next year that will not be confined to those members of the profession happening to have hospital connections; the details have not yet been worked out, but it is understood that a committee representing the various specialties will be appointed who will select members from the organization's roster. These men will then be invited to hold clinic hours in their specialties, the various public hospitals cooperating in the matter of furnishing what clinical material may be needed other than what may be available from private sources. Such a clinic carried out along such lines should be of untold benefit both to those in attendance as spectators and to those conducting the demonstrations.

PROPAGANDA FOR REFORM.

"Premedicated" Alcohol.—A petition to permit the use of so-called "premedicated" alcohol in remedies for internal use has recently been placed before the Secretary of the Treasury and the prohibition officials. According to drug journals, such a petition was presented by the Counsel for the Proprietary Association—the organization of the "patent medicine" interests—and also by the Chattanooga Medicine Company, the makers of "Wine of Cardui." When thus medicated, the alcohol is to be tax free. This proposition contains dangers to medicine and to pharmacy in that it may render scientific control of such medicaments difficult. (*Jour. A. M. A.*, April 1, 1922, p. 970.)

Leaven's Asthma Prescription.—This is put on the market by the Leavengood Drug Co., Rosedale, Kan. The A. M. A. Chemical Laboratory reports that the composition of this preparation is essentially: Potassium iodide, 10.9 gm.; sugar (sucrose), 55.0 gm.; iron, a trace; water, flavoring and coloring matter to make 100 c. c. (*Jour. A. M. A.*, April 1, 1922, p. 991.)

Hormotone.—This is a "pluriglandular tonic for asthenic conditions," sold by the G. W. Carnrick Co. in the form of tablets for oral administration. Each tablet is said to contain 1-10 grain of dessicated thyroid, 1-10 grain of entire pituitary, together with the hormones of the ovary and testes—the amount and the form in which the latter are supposed to be present are not given. The Council on Pharmacy and Chemistry refused to accept Hormotone for New and Nonofficial Remedies. (*Jour. A. M. A.*, April 8, 1922, p. 1074.)

Kolor-Bak.—This is a hair dye marketed by the Hygienic Laboratories, Chicago. It is claimed not to be a dye or stain, but to restore gray hair to its original color. It is claimed to be harmless and not to contain powerful mineral ingredients. The preparation was analyzed in the A. M. A. Chemical Laboratory and was found to contain lead acetate, 0.6 gm., and precipitated sulphur, 1.0 gm. in 100 c. c. It is evident from the analysis that the claims made for Kolor-Bak are false. (*Jour. A. M. A.*, April 15, 1922, p. 1146.)

Eksip.—This is a mail-order "cure" for diabetes, marketed by Matthew Richartz with the slogan, "No more dieting! No more starving! 'Eat and get well.'" Eksip is sold in the form of tablets at $6.00 for 200. The A. M. A. Chemical Laboratory reports that the bulk of the tablets consisted of magnesium carbonate and starch. A small quantity of an unidentified drug was found. Alkaloid, heavy metals and emodin-bearing drugs were absent. (*Jour. A. M. A.*, April 1, 1922, p. 991.)

The Therapeutic Use of Yeast and Vitamin Preparations.—Newspaper and magazines contain gratuitous reminders that we are confronted with menaces to health which not only ought to be averted but which can readily be remedied, when present, by the simple expedient of a potent proprietary vitamin preparation. If some of the claims of the advocates of a widespread yeast or vitamin therapy regarding the danger of vitamin starvation were warranted, one might still question whether the special "concentrated" or vitamin-rich medicaments were required to remedy the situation. An extensive inquiry has led the Council on Pharmacy and Chemistry to the deduction that disease states attributable to lack of vitamin B are not widespread in this country at the present time. Even an enthusiast will be forced to agree with the Council that yeast or yeast vitamin therapy has as yet nothing more than an experimental status. (*Jour. A. M. A.*, April 15, 1922, p. 1127.)

"Proprietary Preparations in Poland."—The influence of the work of the American Medical Association — through its Council on Pharmacy and Chemistry and *The Journal's* Propaganda for Reform in Proprietary Medicines—in protecting the public, both directly and indirectly, against the nostrum evil, extends year by year. Especially is it noticeable when new legislation is created. Recently, the new Polish state introduced regulations governing the manufacture and sale of proprietary remedies. These regulations reflect the change in attitude that has taken place in the public mind in all civilized communities toward the responsibility of those who would make and sell preparations of the home remedy type. The Polish regulations have much in common with recent Austrian and Spanish legislation on proprietary medicines, and the influence of the English proprietary medicines bill is apparent in the prohibition of the use of testimonials. While no quantitative disclosure in the label of the composition of the preparation is required, except in the case of potent drugs, the fullest details are demanded from the manufacturer, this information to be of such a nature as will enable the State Pharmaceutical Institute to prepare the preparation for the purpose of verifying the manufacturer's statements. The obligation of the manufacturer to keep a record, not only of his production but of *all his supplies* to wholesalers, is also a new feature. (*Jour. A. M. A.*, April 8, 1922, p. 1071.)

REVIEWS FROM CURRENT LITERATURE

FUMIGATION AGAINST DIPHTHERIA.

Park, W. H.: Active Immunization Against Diphtheria With Toxin-Antitoxin. Monthly Bulletin of the Department of Health, City of New York, February, 1922.

The results of twenty-five years of experimental and practical investigation of the immunizing effect of toxin-antitoxin injections are as follows:

Three injections, 1 c. c. each, of a suitable toxin-antitoxin mixture spaced one or two weeks apart, will cause about 85 per cent of susceptible children or older persons to develop sufficient antitoxin to give a negative Schick reaction and produce protection against diphtheria.

The development of the immunity is slow. An amount of antitoxin sufficient to prevent the positive Schick reaction does not develop for from one to six months after the receiving of the injections.

The duration of the immunity in at least 90 per cent of the children is for more than six years and probably for the remainder of life.

The toxin-antitoxin mixture should be slightly underneutralized. The exact degree of neutralization has not yet been determined. A dose that causes paralysis but not immediate death in young guinea pigs is effective and absolutely safe for infants and young children.

Toxin-antitoxin injections should not be given within two weeks of an injection of antitoxin, otherwise the toxin is slightly overneutralized and the resulting development of antitoxin is lessened.

Mixtures made from old stabilized toxin and antitoxin are fairly stable and can be used for a period of one year. Even such preparations are at their best when first sent out, as the mixtures slowly tend to become at first neutralized and then slightly antitoxic. This change lessens the immunizing power. The toxin-antitoxin should be kept cool and in a dark place; it is best to use the mixtures within three months of their final preparation.

A toxin-antitoxin mixture of stabilized materials which is safe when it leaves the laboratory cannot become more toxic on being kept. No serious effects have ever resulted from the injections given to the New York children since we began our work seven years ago.

The Schick test is an extremely reliable means of separating those individuals who have antitoxic immunity from those that have none. Although a simple test, it must be carried out with extreme care and the toxin present must be neither 25 per cent more nor less than the desired amount. It is extremely important to choose glass of a suitable chemical composition for the containers in which the toxin is to be placed.

In practical school work, the first Schick test is frequently omitted in children up to the age of six years, because it is easier to inject the children at once rather than to delay for the test. At this age the percentage of children requiring immunization is still high and the annoyance from the injection slight. The omission of the preliminary Schick test facilitates the introduction of the immunizing injections in the schools. Above the age of six years the preliminary Schick test should be made whenever practicable.

No child should be pronounced immune from diphtheria because of having received three immunizing injections of toxin-antitoxin. A negative Schick test is absolutely necessary before one can properly make such a statement or issue a certificate.

The use of the control protein test made with the heated toxin is advisable at all ages when a careful separation of the pseudo negative reaction from the combined positive is important. Like the Schick test, it is frequently omitted because of local conditions. The older the child, the more likely it is to be immune and to give a confusing

protein reaction. In children under five years the protein reaction seldom confuses the picture if the Schick tests are read on the fourth day; between five and seven years the control does not help greatly in more than 10 per cent. In older children and adults the control protein test not only helps us to decide more correctly as to many doubtful reactions but it also indicates with some probability those individuals who are apt to have the marked local and constitutional reactions from the injections.

The toxin-antitoxin injections are inadvisable before the age of six months. During this time most of the infants retain the antitoxin received from their mothers. Up to the age of three months immunizing injections are usually ineffective, as the infant tissues do not respond well during this period to the toxin-antitoxin to produce antitoxin. Under usual conditions it is probably safe to wait until the infant is nine months or a year old and then to give the injections at the first suitable occasion. During the first three years there is almost no annoyance from the injections. As the child grows older the danger from diphtheria gradually lessens and the percentage of those developing local and constitutional reactions slowly increases. When adult life is reached, the danger of infection is almost negligible except under unusual conditions such as those to which a nurse or a physician may be exposed.

There appears to be no difference in the degree of immunity between those individuals who have developed antitoxin from natural causes and those who did so because of the stimulus of the toxin-antitoxin injections.

The only plausible explanation of so-called natural immunity in those who have never contracted diphtheria is that the immunity is due to the stimulus of diphtheria bacilli which have been acquired by the persons as carriers without developing the disease. This explanation seems inadequate to explain many of the known facts, such as the presence of antitoxin in the majority of horses and its tendency to appear at a definite age in the children in different families.

The immunization of school children in acting to prevent their contracting diphtheria also lessens the exposure to infection of the younger children of pre-school age in their families.

It is important to realize that we have in our bodies as a protection against diphtheria not only antitoxin but bactericidal antibodies for the diphtheria bacilli themselves. Antitoxic immunity is more stable. Recovery from the disease diphtheria is usually due to the development of protective substances other than antitoxin. The latter usually develops some weeks later. Recognizing this fact, we realize why those who have no antitoxic immunity do not necessarily contract diphtheria when exposed to it. There is no way of determining the immunity not due to antitoxin. It is certainly more fluctuating and less reliable than antitoxic immunity.

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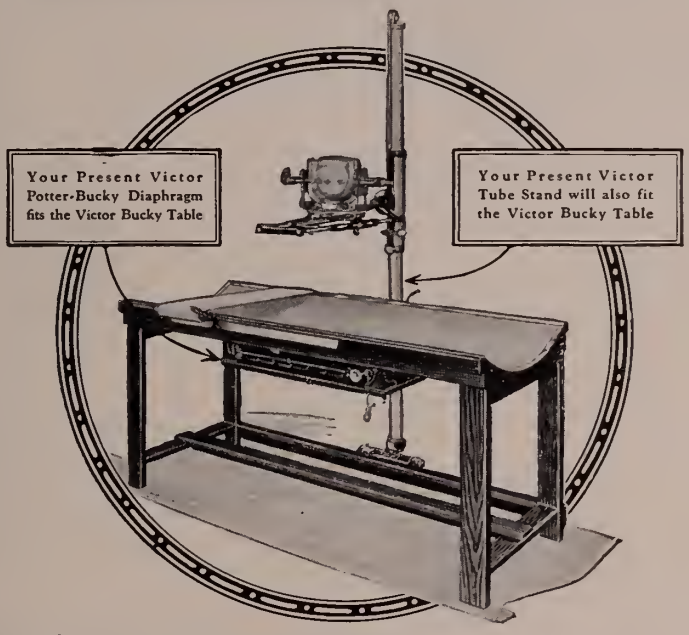
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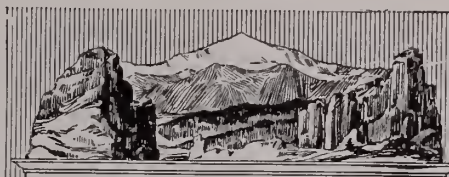
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The Bayside Hospital, Inc.

Bayshore Boulevard

TAMPA, FLORIDA

Division of Laboratories, Herbert R. Mills, M. D., Director.

Dear Doctor—The Bayside Hospital offers to the profession the assistance of its laboratory in determining the metabolic chemical changes of the blood.

Of the nitrogenous waste products, it is believed that the most important information can be gained from the study of the urea nitrogen factor; and, if this is materially increased, the creatinin value should be measured as well. It is also recommended that the uric acid content be determined in all cases of early kidney impairment and in suspected gouty conditions. While the non-protein nitrogen test is sometimes indicated in eclampsia, little knowledge can be derived from this source that cannot be learned from the tests already mentioned. The same may be said of the total nitrogn factor. In faulty carbohydrate metabolism, the sugar level and the CO_2 combining power of blood plasma are of paramount interest. The CO_2 power is also an index of the asidosis of nephritis and eclampsia as well as in other metabolic disturbances.

Unfortunately it is not practicable to make chemical examinations of the blood on specimens which have been sent through the mail, since the elements in question deteriorate quite rapidly after the blood has been collected unless kept at refrigerator temperature. Particularly is this so in the case of sugar and the CO_2 factor. It is usually necessary, therefore, to send the patient to the laboratory for tests of this character. The patient should have fasted twelve to fourteen hours before submitting the blood, so that in the morning before breakfast is the most convenient time.

From ten to twenty c.c. of blood are collected, depending on the number of different determinations to be made, and mixed immediately with potassium oxalate in the proportion of forty mg. of the chemical to twenty c.c. of blood, in order to effect complete defibrinization of the blood. Too much oxalate should not be used, however, as the excess chemical interferes with the precipitation of protein in making the blood filtrate. In the case of chlorides the blood is defibrinated with sodium citrate instead of potassium oxalate. Chlorides may be of interest in some cases of nephritis which are complicated with oedema.

Trusting that the Bayside Hospital Laboratory may be of service to you in helping solve the various diagnostic problems with which you may be confronted, I am

Yours fraternally,

Herbert R. Mills, *Pathologist.*

RADIUM THERAPY

I wish to announce that I am fully equipped to apply Radium Therapy. It is now distinctly recognized that Radium has a distinct field, including pre-operative, post-operative and non-operative cases.

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FOR THE STUDY AND TREATMENT of GASTRO-INTESTINAL DISORDERS AND DIABETES

IN addition to accommodations for bedridden patients the institution is equipped with all modern apparatus for general diagnosis.

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Paid for sickness and accident claims
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in 1920

Total returned to members and saved for future protection
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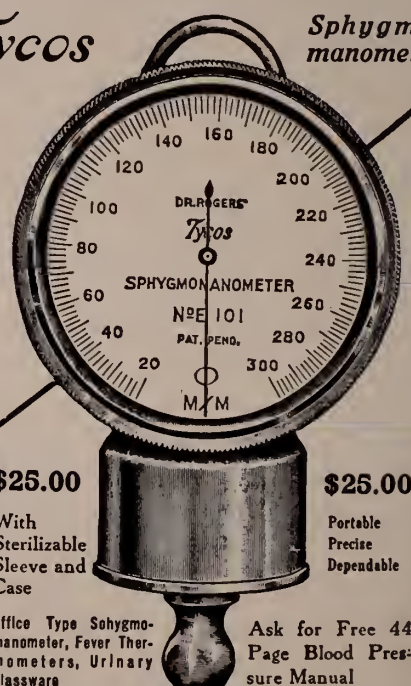
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The Management of an Infant's Diet

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Infants that have a fat intolerance as a result of being fed upon mixtures containing a high percentage of cow's milk fat may develop a condition of constipation of a most pronounced type. This appears, at first, to be most difficult to correct; yet a very simple adjustment of the diet will bring prompt relief. The proper procedure is to remove all of the cream from the milk to be used in preparing the diet and add an easily assimilable carbohydrate. This carbohydrate element should be free from starch and one that has a high point of assimilation, for it is important that a relatively high percentage be used in order to compensate for the heat and energy lost by removing the fat.

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contains the carbohydrate—maltose—which answers the purpose, for maltose is utilized in larger amounts than any other carbohydrate. Successful results may therefore be obtained by preparing the modification with skimmed milk and at least four level tablespoonfuls of Mellin's Food to each pint of the food mixture.

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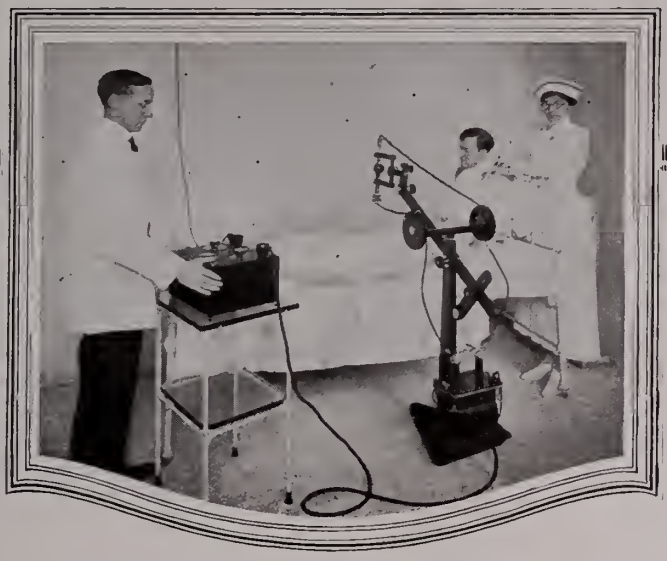
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Regularity in bowel movements contributes much toward normal, healthful progress, and a knowledge of the number and character of the stools during each twenty-four hours is an important part of the general management of early life and assists much in properly adjusting the diet.

Suggestions for the regulation of infants' stools by slight changes in the make-up of the diet and particularly in relation to

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Motor wired for service on 32, 40 or 220 volt current, extra.. 5.00

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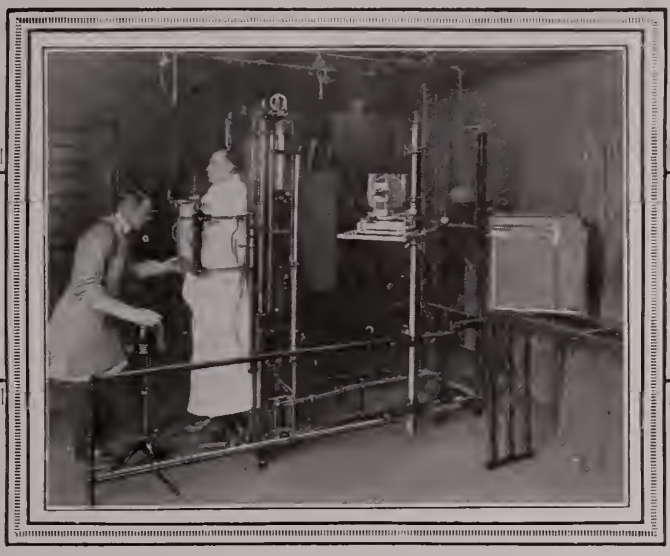
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Unfortunately it is not practicable to make chemical examinations of the blood on specimens which have been sent through the mail, since the elements in question deteriorate quite rapidly after the blood has been collected unless kept at refrigerator temperature. Particularly is this so in the case of sugar and the CO_2 factor. It is usually necessary, therefore, to send the patient to the laboratory for tests of this character. The patient should have fasted twelve to fourteen hours before submitting the blood, so that in the morning before breakfast is the most convenient time.

From ten to twenty c.c. of blood are collected, depending on the number of different determinations to be made, and mixed immediately with potassium oxalate in the proportion of forty mg. of the chemical to twenty c.c. of blood, in order to effect complete defibrinization of the blood. Too much oxalate should not be used, however, as the excess chemical interferes with the precipitation of protein in making the blood filtrate. In the case of chlorides the blood is defibrinated with sodium citrate instead of potassium oxalate. Chlorides may be of interest in some cases of nephritis which are complicated with oedema.

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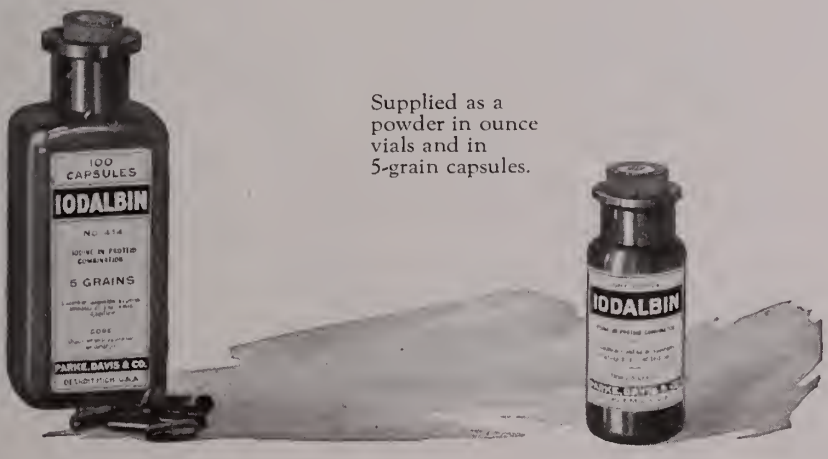
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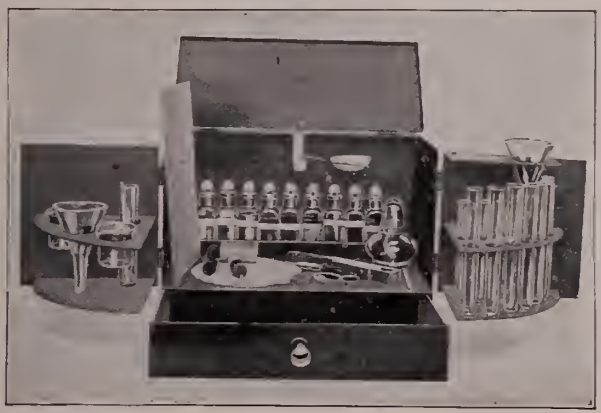
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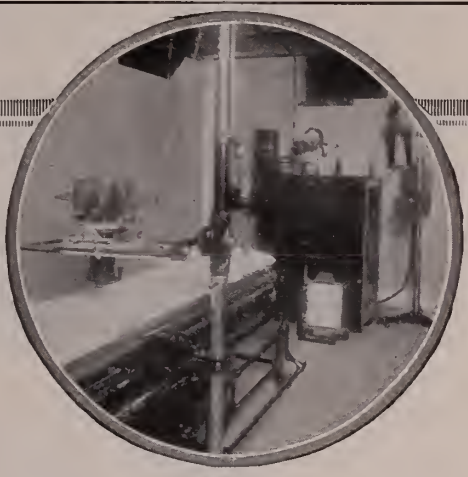
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Wholesome—because it is made of the highest grade materials possible to obtain, and contains only such ingredients as have been officially approved by United States Food Authorities.

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These laboratories are equipped for making every test of clinical value in the diagnostic study of medical and surgical cases. Only standardized methods and technique are used.

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Kansas City General Hospital With Victor Equipped X-Ray Laboratory

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Dear Doctor—The Bayside Hospital offers to the profession the assistance of its laboratory in determining the metabolic chemical changes of the blood.

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From ten to twenty c.c. of blood are collected, depending on the number of different determinations to be made, and mixed immediately with potassium oxalate in the proportion of forty mg. of the chemical to twenty c.c. of blood, in order to effect complete defibrinization of the blood. Too much oxalate should not be used, however, as the excess chemical interferes with the precipitation of protein in making the blood filtrate. In the case of chlorides the blood is defibrinated with sodium citrate instead of potassium oxalate. Chlorides may be of interest in some cases of nephritis which are complicated with oedema.

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$223,225.00
in 1920

Saved for future protection of members
$47,825.00
in 1920

Paid for sickness and accident claims
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in 1920

Total returned to members and saved for future protection
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in 1920

Expense of operation less than
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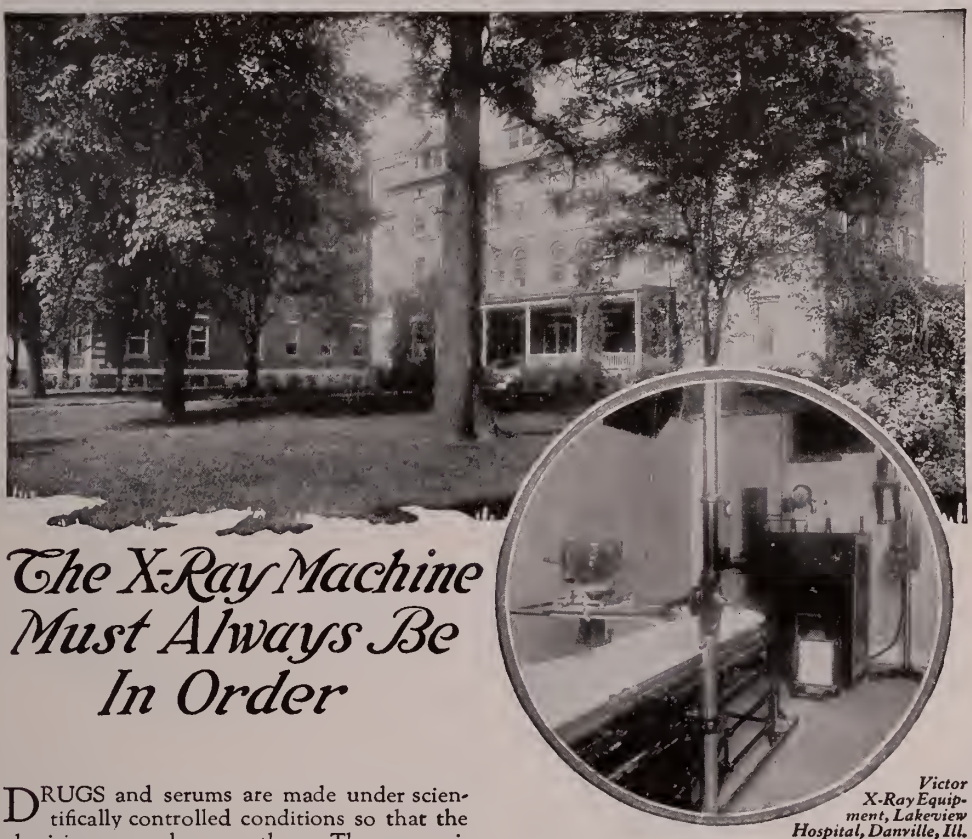
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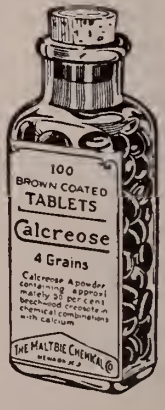
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Chief of Staff. Director Division of Surgery. Head of Section One, Division of Surgery.

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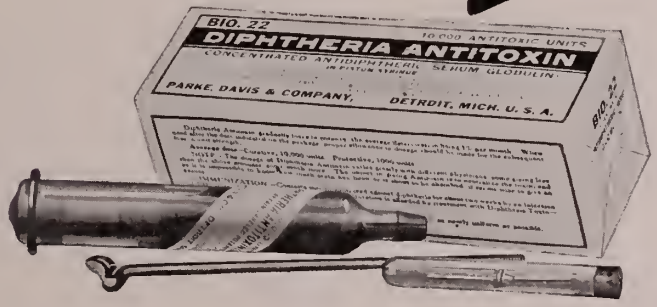
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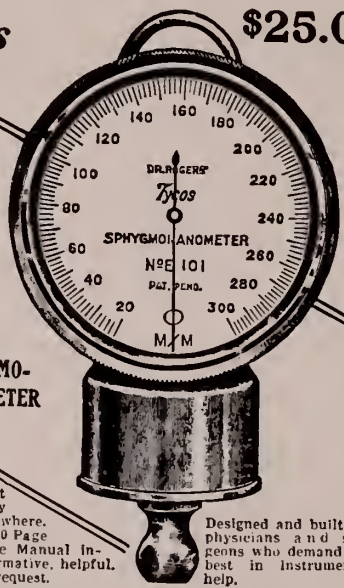
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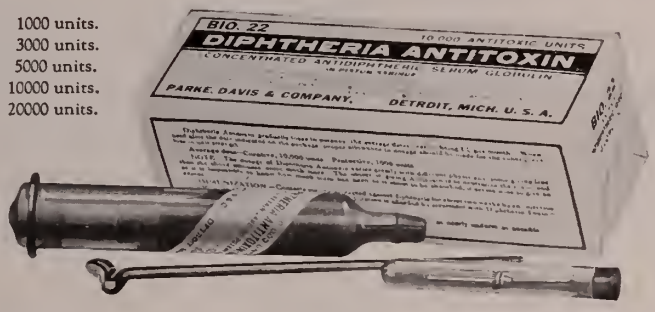
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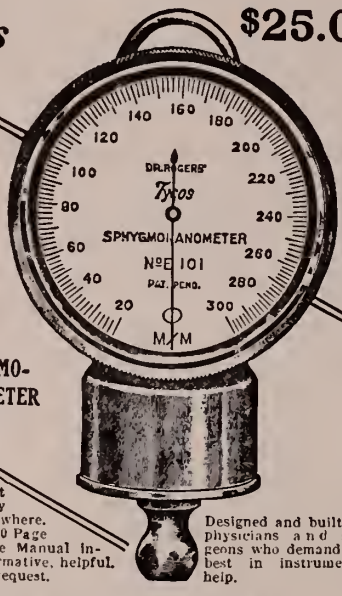
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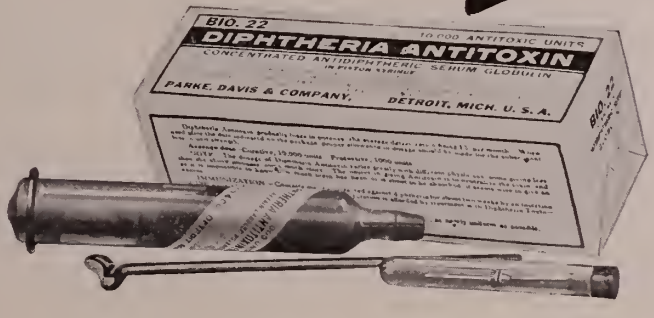
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1 Metal Disc
1 Hand Power High Speed Centrifuge, complete with tubes and shield
1 Large Test Tube Rack
12 Assorted Test Tubes
1 Test Tube Brush
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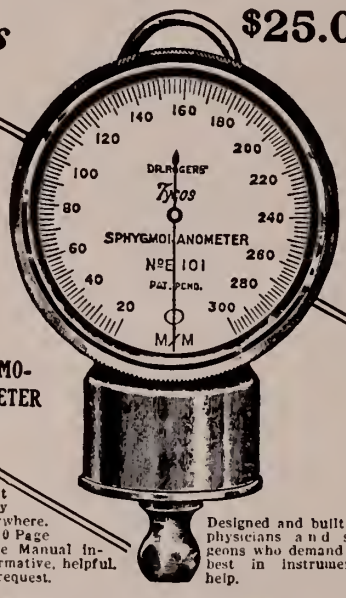
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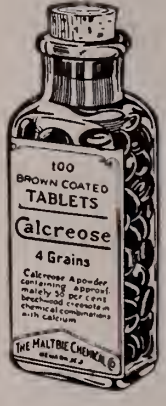
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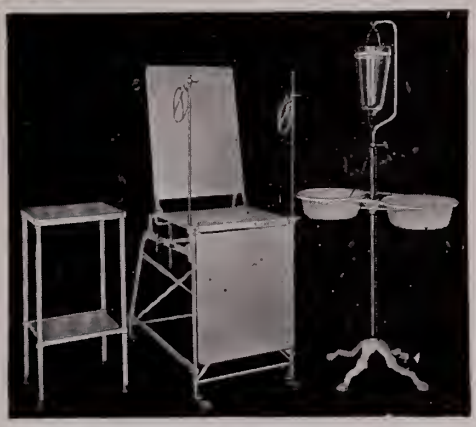
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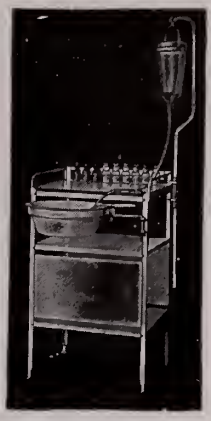
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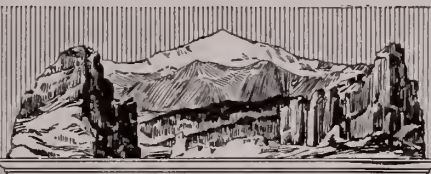
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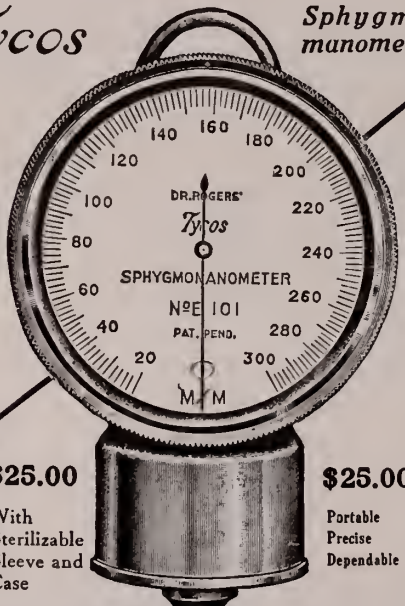
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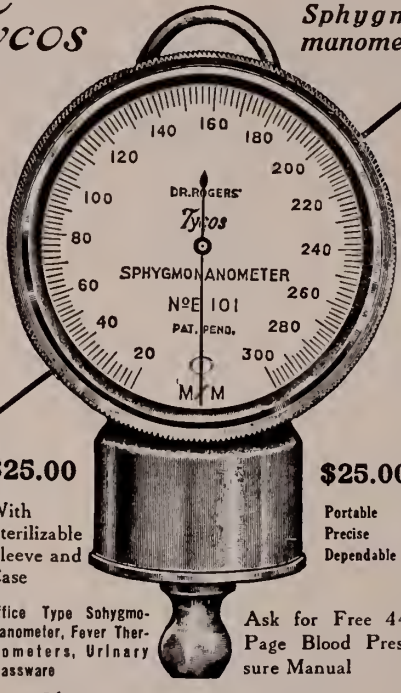
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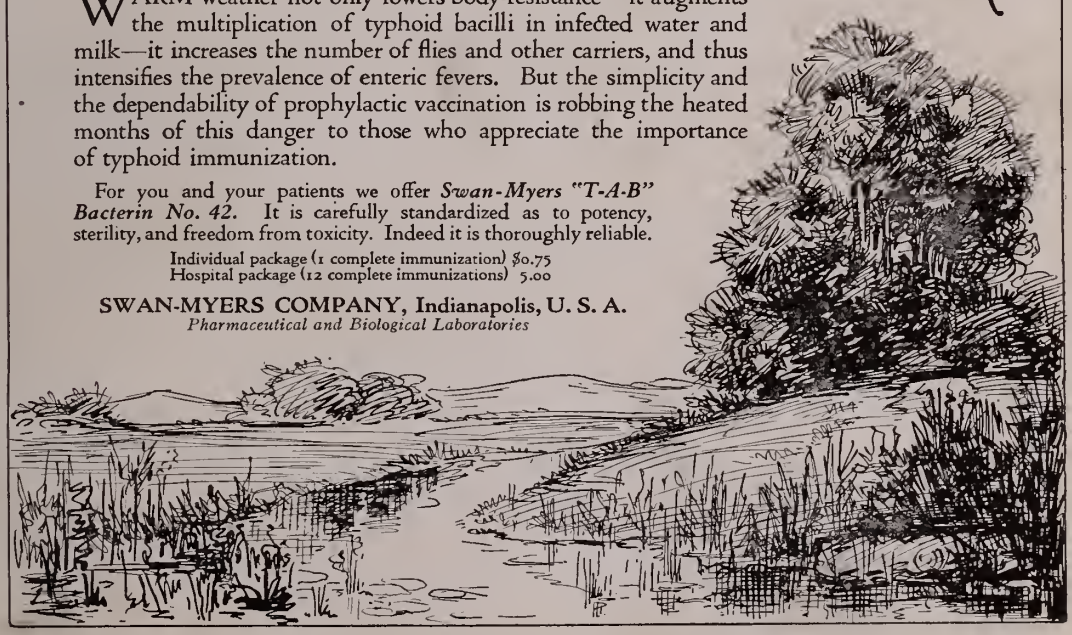
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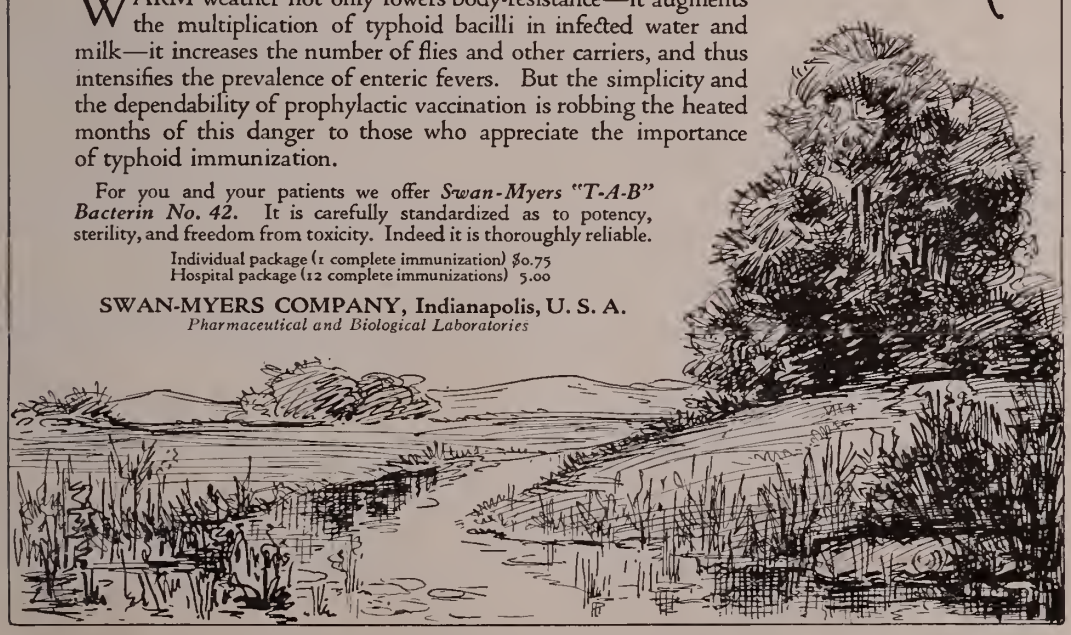
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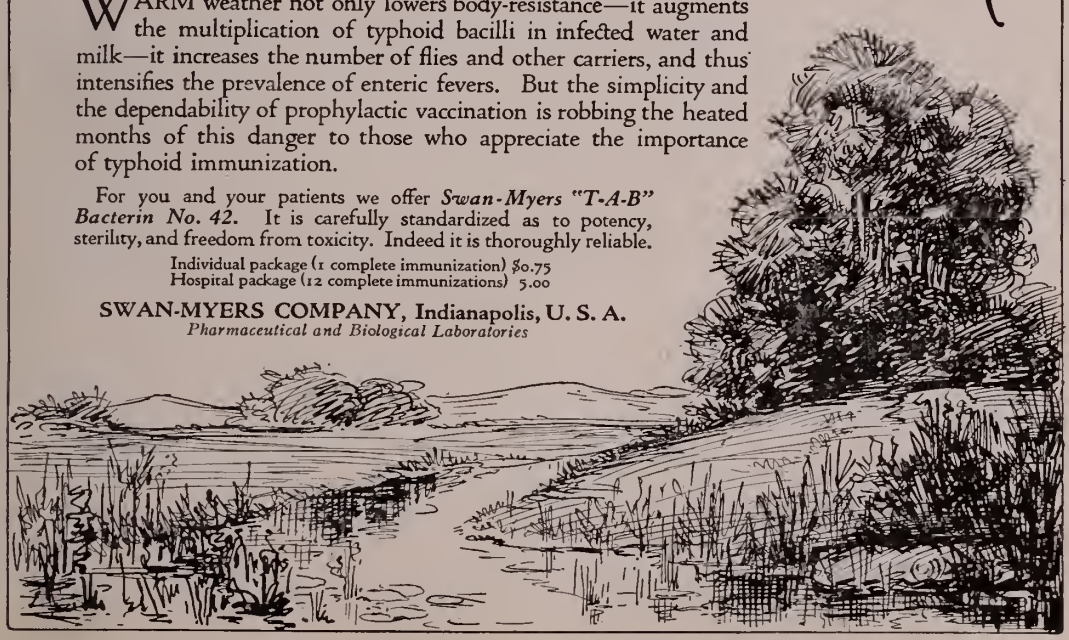
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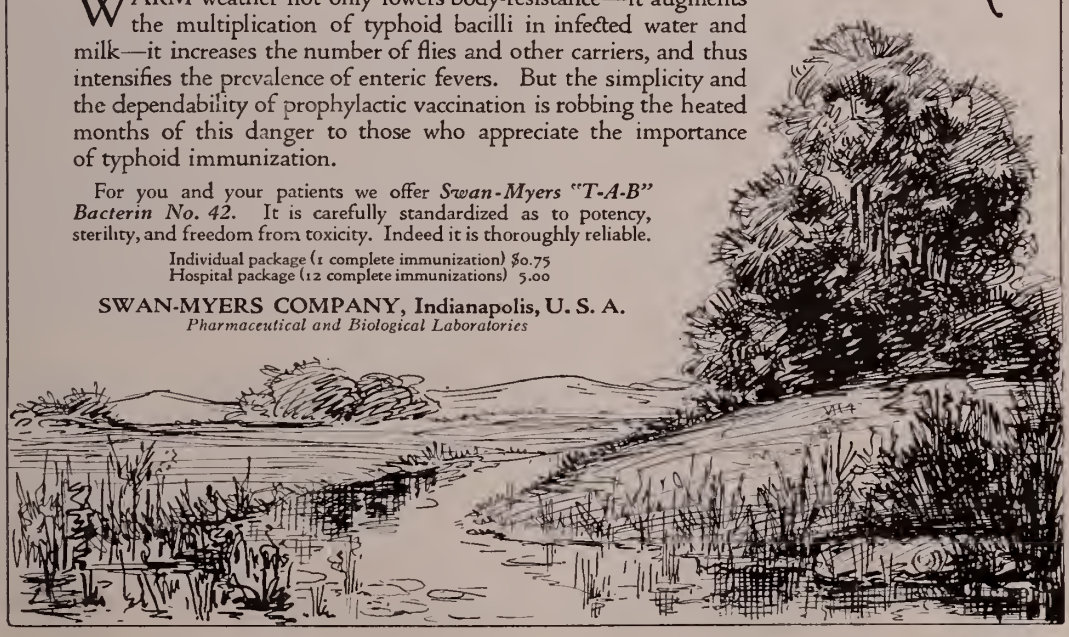
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